March 1961

Education Library

SCHOOL MANAGEMENT

PRACTICAL SOLUTIONS TO SCHOOL MANAGEMENT PROBLEMS

HOW YOUR DISTRICT CAN SET UP A COMMUNITY COLLEGE

UP-TO-DATE SCIENCE LABS

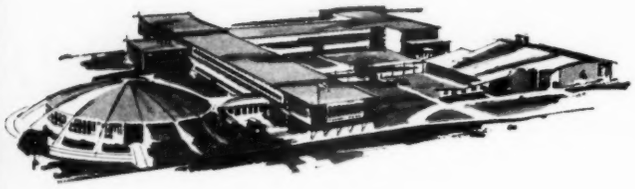
How GOOD are your schools?

EXCELLENT
SUPERIOR
AVERAGE
FAIR
POOR

HOW TO EXPLAIN Standardized Test Scores TO YOUR PARENTS

SEE COMPLETE CONTENTS ON PAGE 2

Dr. John C. Albohm, Superintendent of Schools, York, Pennsylvania, says:



"Honeywell thermostats on the wall assure our students an ideal climate for learning"

A thermostat in every classroom of award-winning Hannah Penn Junior High School, controls room temperatures to fit the activity. Result: better teaching, better learning.

"Students are more alert and respond quicker when classroom temperatures are accurately controlled," says Dr. Albohm. "With a Honeywell thermostat on the wall of every classroom, we're assured of precise, responsive temperature control regardless of the activity or size of the class. What's more, our students work in a happier, healthier environment—this means fewer absences, greater in-school efficiency."

In schools, the wall is always the best place for the thermostat. On the wall, it feels classroom temperature the way students do. It is also more convenient to read and adjust. And it helps keep fuel bills at a minimum by preventing wasteful overheating.

You can also depend on Honeywell to recommend the best temperature control system for your school because only Honeywell makes all three types of control systems—pneumatic, electric and electronic. For further information, call your local Honeywell office. Or write Honeywell, Dept. SM-3-60, Minneapolis 8, Minnesota. Sales and service offices in all principal cities of the world.

HANNAH PENN JUNIOR HIGH SCHOOL,
YORK, PENNSYLVANIA
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General Contractors: Reindollar & Son
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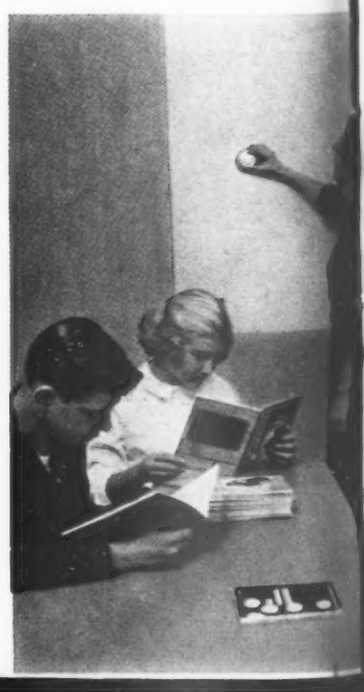
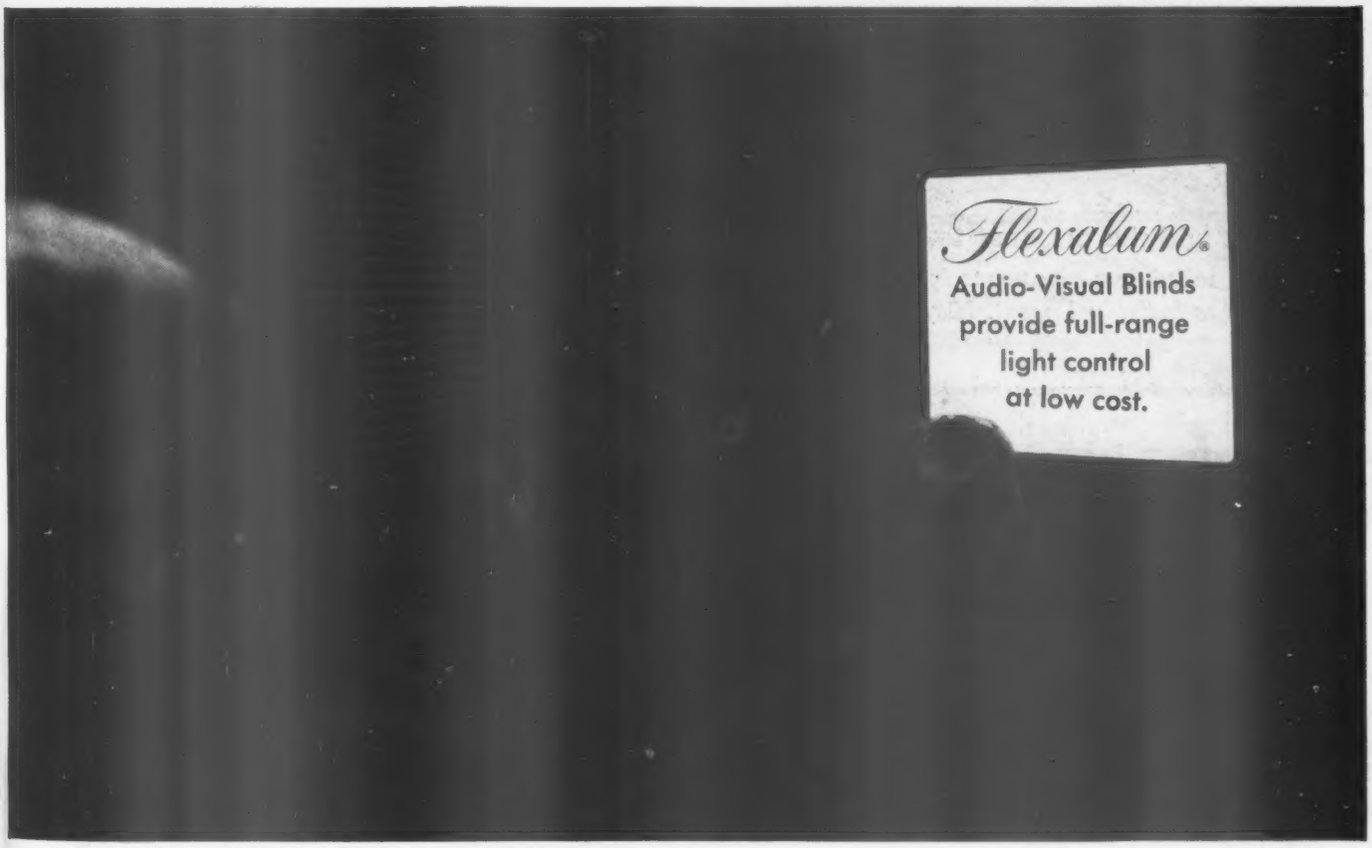
SINCE 1885



LIGHT Flexalum Audio-Visual Blinds, with slats open, provide controlled daylight without glare, plus ventilation, for ordinary classroom activities. The soft, diffused light is easy on the eyes . . . and dispositions.

MEDIUM Slats partially closed, give light enough for note-taking, yet darken room so projected slides of charts, etc., may be clearly viewed. Precision tilt mechanism with fine adjustment, affords exact degree of light needed.



DARK Completely closed Flexalum Audio-Visual Blinds give projection-room darkness. No light seeps in, thanks to light trap channels, and Flexalum's tighter overlapping slats. Projections of fine line drawings, microscopic slides, colored maps, etc., show up sharply on screen. All Flexalum Audio-Visual Blinds are fully guaranteed for five years, in writing.

Write for specifications to Bridgeport Brass Co., Hunter Douglas Division, 30 Grand Street, Bridgeport 2, Conn.

(Circle number 709 for more information)

SCHOOL MANAGEMENT

March 1961

Features

How to set up a community college **56**

Establishing a community college in your district is neither difficult nor expensive. Here, two experts tell how you can begin, and how much it will cost.

How to explain standardized test scores to your parents **61**

In many states and cities, schools are compelled to tell parents their children's scores on tests. Here's how you can present this information.

How good are your schools? **65**

There are two ways to evaluate your schools: do it yourself, or employ an outside appraisal team. Here's how, and why, one district did both.

How to keep your science labs up-to-date **70**

Demands for improved science teaching may make many high school labs obsolete. Here's why one district thinks its labs will never be outmoded.

Are your elementary schools ready for foreign languages? **74**

Here are some ideas, based on a district's experience, to help you develop—or improve—an elementary school foreign language program.

How to add the personal touch to machine scheduling **78**

Machine scheduling of courses in this large high school has resulted in more, not less, personal attention to individual needs. Here's how it's done.

Editor: Paul Abramson; **Feature Editor:** Theodore C. Boytos; **News Editor:** Bernard E. Weiss; **Art Director:** Laurence Lustig; **Production Manager:** Virginia E. Ray; **Art Production Manager:** Joan Longnecker; **Copy Editor:** Mary Kring; **Production Assistant:** Elaine Lesta; **Associates:** Dr. Orlando F. Furno, *Educational Research;* Richard Flambert, *Food Service;* Dr. Stephen F. Roach, *School Law;* **Circulation:** James Vinisko, *Supervisor;* Marie LaGuardia.

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VOL. 5 NO. 3

Short Reports

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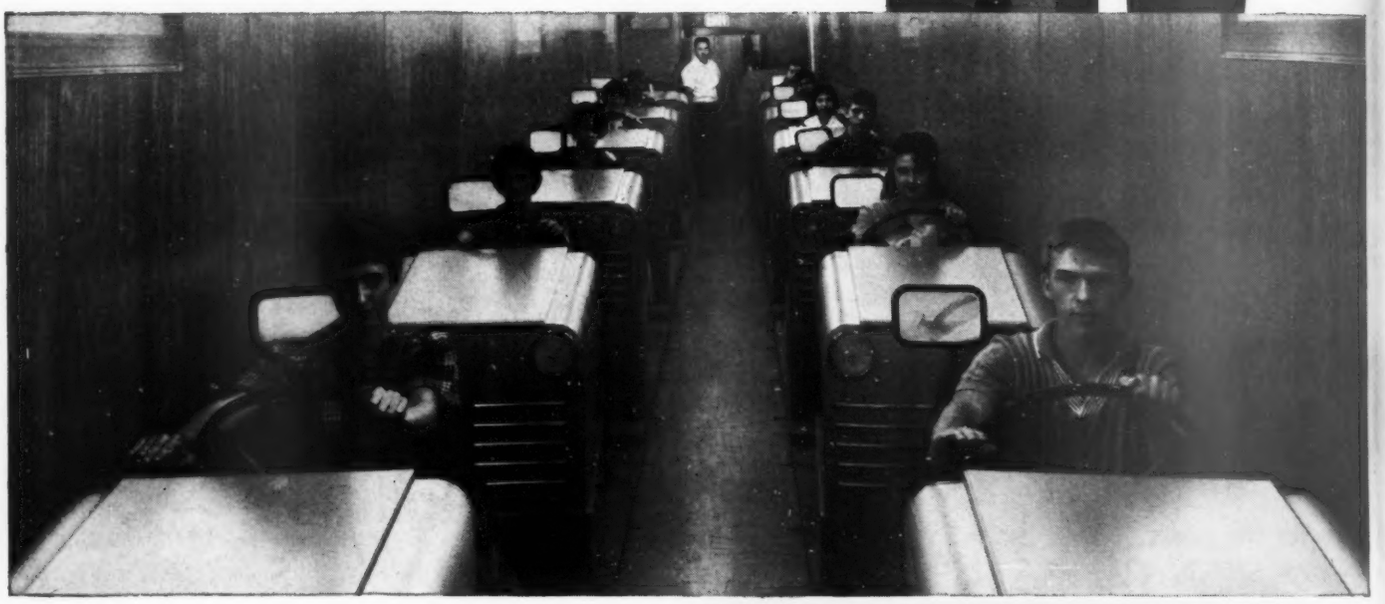
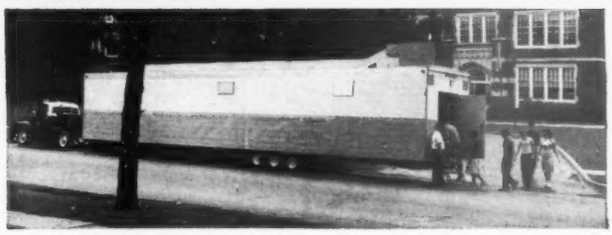
★★★

What Wichita's doing to improve driver education



Over 1000 students at five schools in Wichita, Kansas, take part of their course in driver training behind the wheel of a precision electromechanical simulator that provides better instruction and saves almost $28,000 annually. The Aetna Drivotrainer system, made by Rockwell Manufacturing Company, is comprised of stationary "cars" equipped with all essential instruments and controls; a film projector, screen and series of specially prepared movies; and a recording unit which automatically scores individual student reactions.

School officials credit the Drivotrainer system with four major teaching advantages: *Realism*—films depict specific driving problems the average driver encounters daily. *Comprehensiveness*—only a lifetime of driving could duplicate the variety of regular and emergency driving situations covered by the 21 films. *Feedback principle*—individual scoring quickly determines areas of weakness, permits immediate corrective action. *Better Attitudes*—proper attitudes towards safe driving and regulations can be developed, made part of acceptable group standards.



Two 55-foot trailers, equipped with 12 "cars" each, permit flexibility in extending the program to five high schools. At a cost of about $7000 each, these classrooms replace an estimated $135,000 in classroom equipment and buildings.

Economics of Drivotrainer. Giving 12 students 8 hours of behind-the-wheel instruction requires 96 teaching hours. Through the use of Drivotrainer, this is reduced to 48—or 4 hours per student. At $6.00 an hour, this represents a savings of $24,000 in time needed to instruct 1000 students. Because the number of dual control automobiles needed has been reduced from 14 to 7, an additional $3500 is saved in operation and maintenance costs.

Get the Full Story. Find out how the Drivotrainer system can make a substantial contribution to the driver education program in your community. Facts, figures, specifications and photos of typical installations (permanent and mobile) FREE; write: Rockwell Manufacturing Company, Drivotrainer Division, 17-C North Lexington Ave., Pittsburgh 8, Pennsylvania.

DRIVOTRAINER

another fine product by

ROCKWELL

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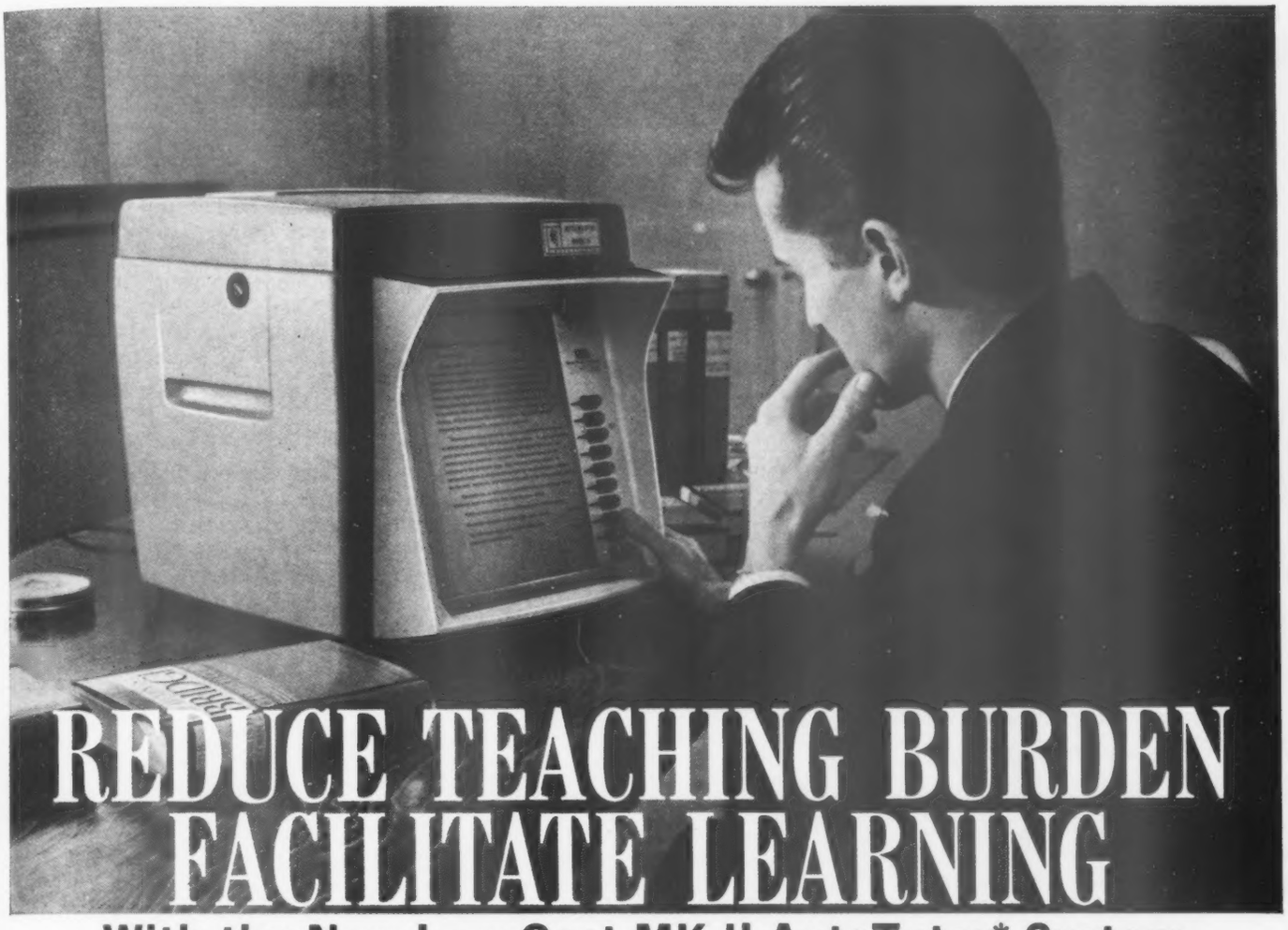

REDUCE TEACHING BURDEN FACILITATE LEARNING

With the New Low-Cost MK II AutoTutor* System

With the new MK II AutoTutor, Western Design & Electronics brings teaching machines down out of the clouds and offers a practical, inexpensive, automatic tutoring system that you can put to use now.

The complete system consists of standard courses, specially prepared on microfilm (TutorFilm*) and a new portable, tabletop, teaching machine, the MK II, which visually presents the courses to the student and records his learning progress.

The AutoTutor teaching system achieves full student participation and automatically instructs and corrects each student individually. For enrichment programs for the gifted student, for keeping the slower student up to standard performance requirements, for teaching all students at their maximum rate of learning — the AutoTutor is an invaluable aid for the teaching of academic courses in the classroom. It relieves the teacher of much of the routine burden of teaching... eliminates unnecessary "paper grading"... frees the teacher for the more creative aspects of his job... increases the teaching capacity per faculty... and boosts the school's academic standards. Important self-tutoring applications outside the classroom include use in libraries, study rooms, and laboratories.

Western Design & Electronics' AutoTutor teaching systems are already in use by leading school systems and universities, and in industry and the military. For information on how you can put **tomorrow's tutoring system to use today,** mail the coupon below for the AutoTutor brochure. The brochure details the way the system operates, lists the standard "off-the-shelf" courses immediately available, and it provides purchase and lease/purchase information.

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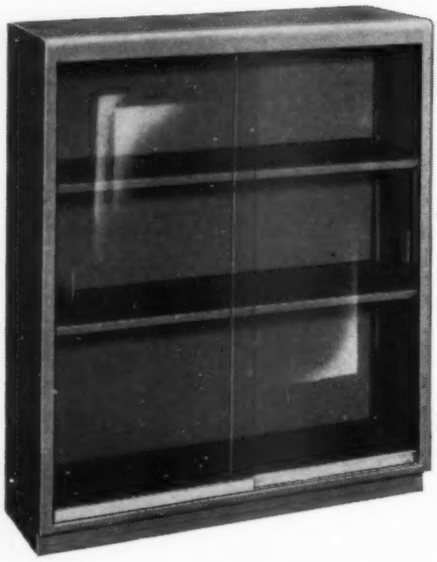

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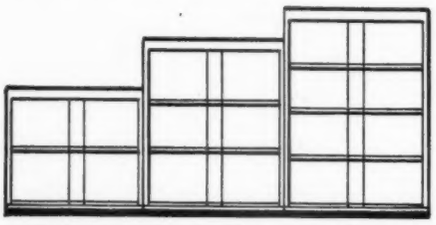

30 H by 34½W, 42 H by 34½W, 48 H by 34½W. All come in two depths: 11⅝ or 18 in.

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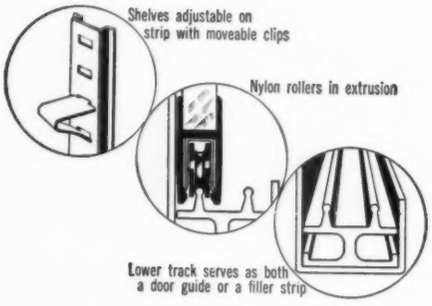
NEW MODEL 42

These features commend H-O-N BOOKCASES to your use in the classroom and the office. . . .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A sampling of correspondence across the editor's desk.

CEI—excellent

SIR: Since receiving the January, 1961, issue of SCHOOL MANAGEMENT (*devoted exclusively to SM's Cost of Education Index*), I have been wanting to write and express my sincere and deep appreciation for the very excellent material on education costs. It is, without doubt, the finest work of its kind I have seen so clearly presented. I have spent many hours on it and will use it often in presenting facts to the school board.

GEORGE C. ACKERLUND
SUPERINTENDENT OF SCHOOLS
QUAKERTOWN, PA.

School finance course

SIR: This letter is rank heresy on my part because I happen to be a member of the editorial advisory board of a rival publication. However, the least I can do is to be honest and congratulate you on one of the finest issues of a professional journal I have ever read—the January, 1961, issue of SCHOOL MANAGEMENT. As a former teacher of school finance, as one who still reads and writes in the school finance area, and as one who presently is engaged in school finance administration in higher education, I can find much to commend and nothing to condemn in this issue. I kept wondering about the statistical base for the CEI as I read through the issue and then, on page 140, I found the answer. This issue contains almost the complete framework for an excellent school finance course because all the essential elements of such a course—except for descriptions of financial support programs—are present. Congratulations on a scholarly, readable, usable, professional contribution.

JOHN E. CORBALLY, JR.
DIRECTOR, PERSONNEL BUDGET
OHIO STATE UNIVERSITY
COLUMBUS, OHIO

Of value to public

SIR: Congratulations to you and your staff for a superb job in your presentation of the subject, "How to explain to your public the rising cost of education." The wealth of background information that can be developed from the nine articles in your presentation will be extremely valuable for any public presentation and will certainly provide material of interest to every person who has any part in the operation of our schools—and who doesn't?

A "well done" to your whole team.

ALDEN T. STUART
SUPERINTENDENT OF SCHOOLS
PATCHOGUE, N. Y.

Superior research

SIR: Your January, 1961, issue is an outstanding contribution to school administration. You are to be congratulated on an extensive presentation of superior research on the problem of student administration.

MARIAN W. VIDAL
BUSINESS MANAGER
FOX POINT-BAYSIDE SCHOOLS
MILWAUKEE, WIS.

Gores challenged

SIR: I have just finished re-reading, "Five superintendents plan a junior high school," (*SM, Nov. '60*). It is time to challenge Dr. Harold Gores' statement, "We haven't seen any outstanding junior high schools."

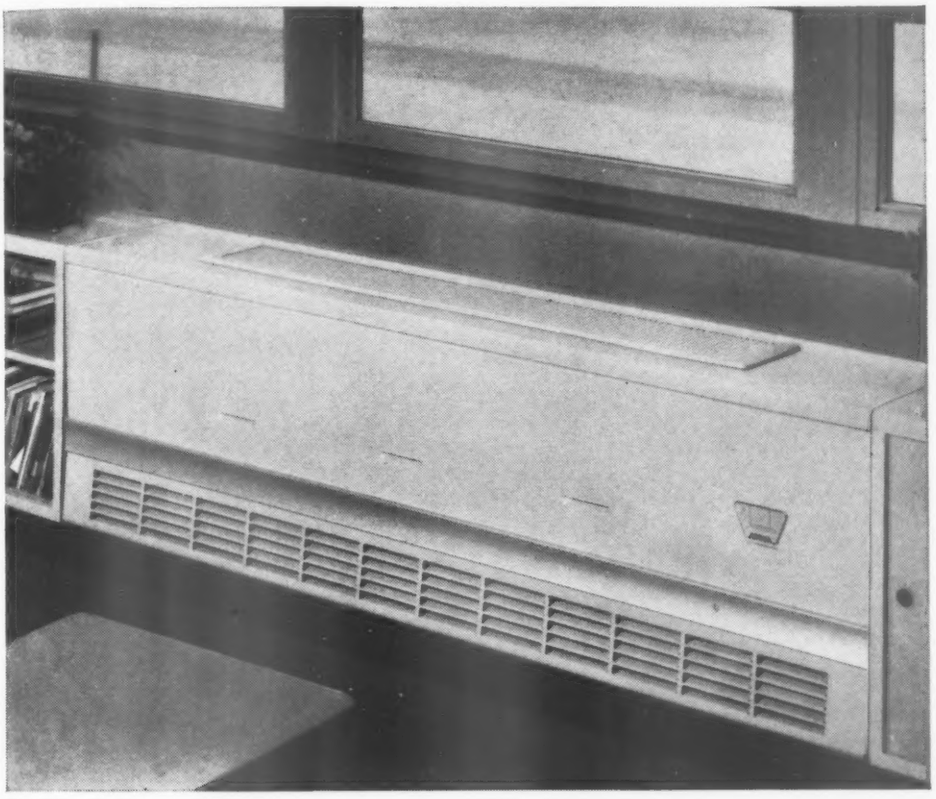
The Marshall Junior High School, completed last summer by the Wayne Community School District, Wayne, Mich., is an outstanding junior high school. It embodies most of the recommendations set forth by your panel of five experts. Designed for 900 pupils, it has classrooms for language arts, social studies, mathematics and science arranged in groups of four to facilitate team teaching, block time scheduling, and guidance by teachers. Each of the language arts-social studies rooms has its own adjoining work-conference room, while the two multi-purpose science-mathematics rooms share a large work-storage room. There are six of these groups, making a total of 24 teaching stations.

Grouped along a "main street" are two art rooms, two all-purpose homemaking rooms, two general shops, a three-station gymnasium, a band room, a vocal music room, and a typing room, as well as a special education room, making a total of 37 teaching stations. Here also are the library, cafetorium, and administrative suite.

Nearly a year went into preliminary planning. The results, I feel, confound Dr. Gores' statement. I am, of course, a bit prejudiced, since I acted as consultant for this building.

CHARLES WELLS, JR.,
SCHOOL PLANT PLANNING CONSULTANT
WAYNE COUNTY, MICH.

NEW CLASSROOM COMFORT with CHROMALOX electric unit ventilators



"PLUS" BENEFITS FOR NEW AND REMODELED SCHOOLS

- **eliminates boiler, boiler room, valves, chimney**
- **provides draft-free, quiet heat and ventilation**
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- **air capacities to fit modern classroom needs**

Chromalox Electric Unit Ventilators provide more exclusive cost saving features for comfortable, convenient classroom operation than any other system. Chromalox Electric Unit Ventilators eliminate costly boiler room systems, require less floor space. The widest choice of heating and ventilation cooling capacities permits selection of unit that best meets your specific room comfort requirements.

Custodian time and effort is cut to a minimum by such features as: permanently lubricated motor bearings which eliminate periodic oiling; quick access to one piece filter by removal of aluminum panel; acrylic baked enamel surface finish which reduces cleaning time and resists marring. The roomy 4″ high kick-board area permits use of power floor maintenance equipment.

Your architect and engineer know the advantages of electric heating. Over 1000 classrooms are already equipped with a Chromalox electric heating system that provides so many extra benefits. Investigate the system backed by over 40 years of electric heating experience and a nationwide field service organization. The coupon below will bring the information you need.

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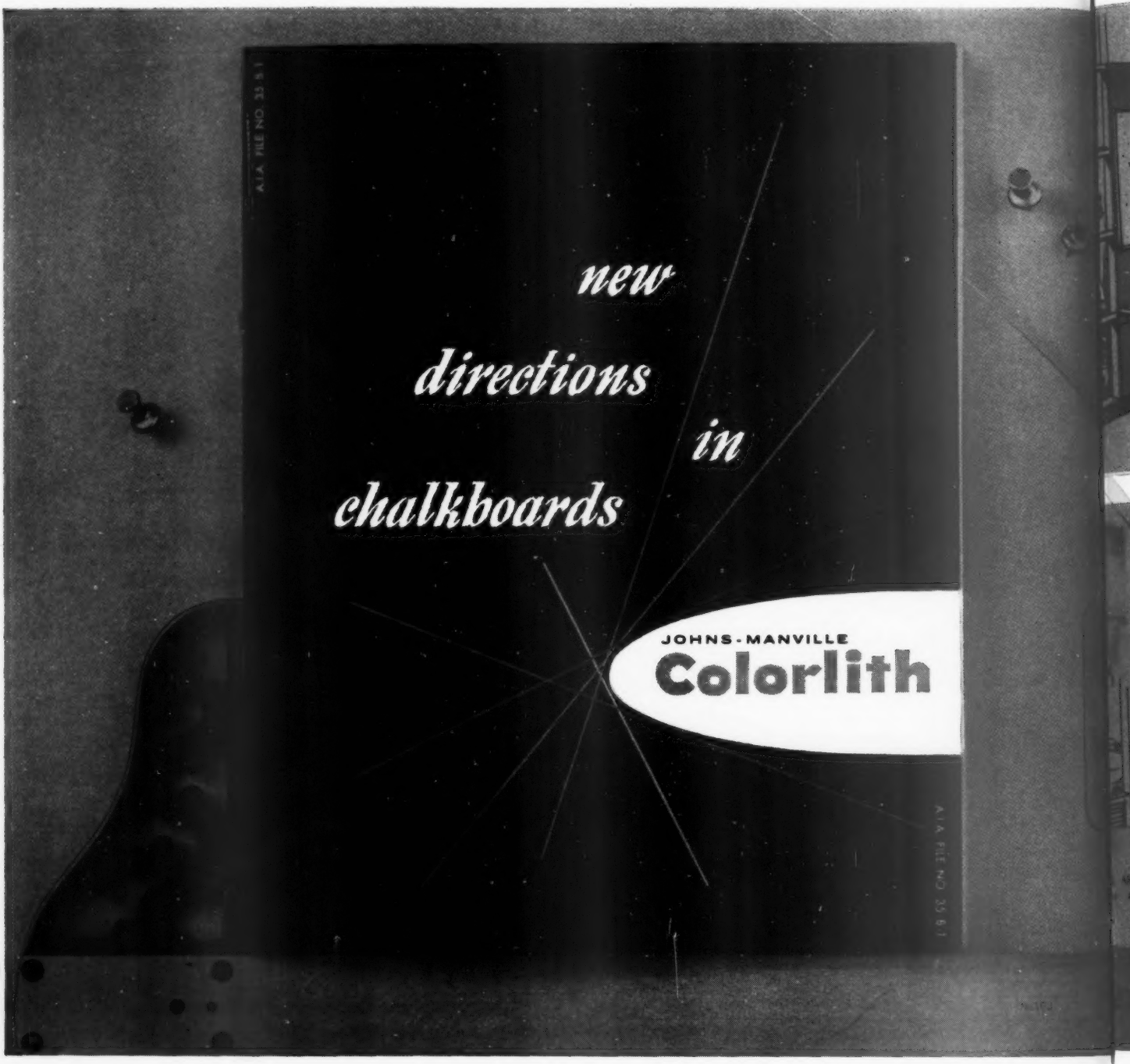
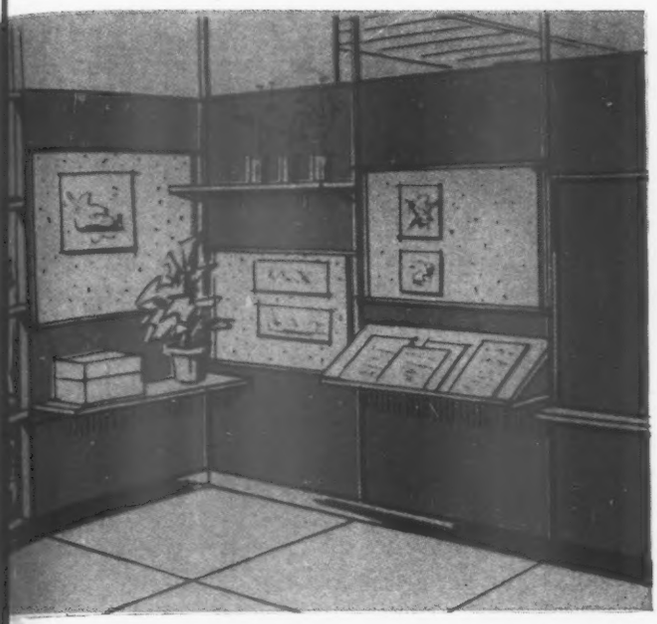


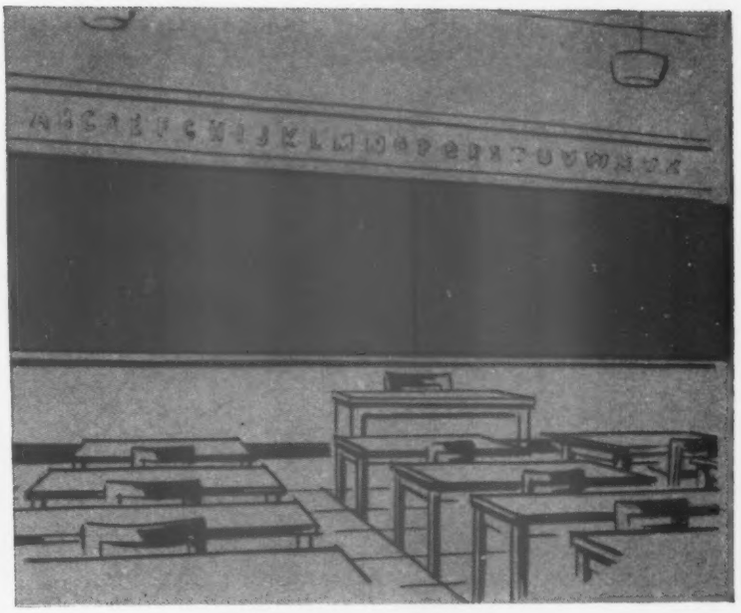
New chalkboard idea booklet shows advanced classroom

STRONG, DURABLE PANELS IN FOUR INTEGRAL COLORS PROVIDE SMOOTH WRITING SURFACE AND HIGH VISUAL CONTRAST

Your imagination can lead to exciting new ideas in classroom design when you use J-M Colorlith chalkboard. This versatile and unusual asbestos-cement material makes possible many novel construction features . . . such as partitions, doors, wardrobe panels, movable storage units, convertible and easel-reversible units. Yet for all its structural strength and integral color, J-M Colorlith costs less than other quality boards!

The three regular Colorlith shades—Cyprus Green, Cameo Brown and Charcoal Gray—have been supplemented with deep, warm J-M Spruce Green. This new blue-green chalkboard is high in visual contrast with a desired reflectance factor of 15%. And, for use as a still or motion picture screen, you can specify Colorlith in Projection White. Panels in all colors are 4′ x 8′, light in weight, easy to handle





Shown here are excerpts from "New Directions in Chalkboards," a colorful, 16-page brochure containing many exciting chalkboard designs especially created for Johns-Manville by Peter Schladermundt Associates, noted industrial designers.

Detailed schematics show how Colorlith can be installed with or without trim, combined with tackboard, using snap-on chalk trays, and in many other ways. Just fill out the coupon below for your free copy of this instructive brochure.

designs made possible by J-M COLORLITH®

and install. No special wall treatment is required.

Colorlith offers good "tooth" without "drag," so chalk glides smoothly over the surface in a full, unbroken line of greater intensity. Colorlith chalkboards are easy to clean, and because their background is clear and dark, erasure leaves no "ghosts." Boards require no chalking-in. In any of its colors, Colorlith meets "American Standard Practice for Schools" reflectance recommendations of AIA and the Illuminating Engineering Society. For details mail coupon. In Canada, address Canadian Johns-Manville, Ltd., Port Credit, Ontario. Cable address: Johnmanvil.

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Please send me J-M Brochure IN-295A, "New Directions in Chalkboards."

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Stars of 1960 **SINGER** Young Stylemaker Contest

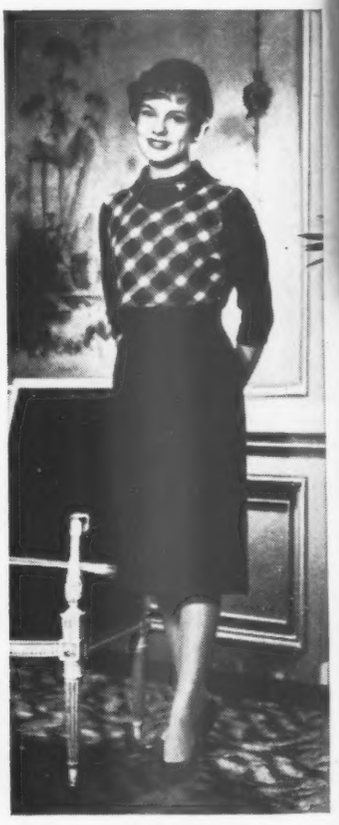
Top thrills of sewing! These Grand Winners outsewed 60,000 girls in the 1960 Young Stylemaker Contest. They were among 5000 who won prizes including sewing cases and SINGER* Sewing Machines.

The 15 top regional winners (five from each Division) traveled to New York for an expense-paid round of sight-seeing, plays and judging—for which they modeled their own creations.

Start planning now for a 1961 winner from your school! Use these success stories to encourage your students to enter the 1961 Contest . . . open to girls 10 to 21 who enroll in the SINGER Contest Dressmaking Course. There'll be thousands of winners . . . *no losers!* Everybody improves sewing skills, and has fun making a dress, suit or other wearable. Watch for contest rules to be published soon.

Misses and Mrs. Division Winner, Mary Jane Diehl of Canfield, Ohio, now a college freshman, won $1000 and a trip for two to Paris couture houses. She used Vogue Pattern #5029 for her brown and white wool herringbone suit.

Teen Winner—15-year-old Texas belle, Cheryl Ann Little of San Antonio won United States Tour and $600 with this black and white checked wool suit. Vogue #1637.



Tween Winner—Frances Wargo, 13, bright-eyed Bellaire, Texas lass, sewed up top prize of U. S. Tour and $400. She made her green wool dress from Simplicity Pattern #3541.

SINGER SEWING CENTERS

Listed in your phone book under SINGER SEWING MACHINE CO.

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KING-SIZE
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HOBART AM SERIES DISHWASHERS

It takes just four square feet, but a Hobart AM Series Dishwasher will wash a stack of dishes six stories high every hour.

And you can tailor-fit this high-capacity dishwashing center where you want it—for straight-through or corner operation. Hobart's exclusive high-speed revolving wash action and all-angle, above-and-below rinse give you finest results at lowest cost.

Models with electric timed controlled wash and rinse... plus other optional features... further reduce the need for operator supervision.

An AM Series dishwasher or one of Hobart's other 50 models is sure to fit perfectly into your operation—whether for replacement or for a new kitchen. The Hobart Manufacturing Company, Dept. 309, Troy, Ohio.

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Heating, cooling with gas. A report issued by the American Gas Assoc. discloses that a 2,300-student air conditioned compact school with natural gas as its only source of power, can be built for 16% less than a conventional school without air conditioning. Cost of operation is also less than in a conventional building. Because a school can be built compactly, which in itself cuts construction costs, it can also be ventilated easily. Exhaust heat from a gas turbine unit can be used to make steam or hot water, and the turbine itself provides power for the school.

For a free copy of this report, circle number 818 on the Reader Service Card.

Film catalog. More than 1,200 films in 30 subject classifications are included in a catalog distributed by Encyclopaedia Britannica Films, Inc. The catalog lists films which cover full courses in physics, chemistry, biology, languages and other subjects. There are, for example, 162 films on physics. The listings cover all grade levels, primary through adult, and are fully annotated.

For a free copy of this catalog, circle number 824 on the Reader Service Card.

Maintenance at the door. Cleaning, restoration and preservation of materials used in entrances, vestibules and nearby corridors are covered in a maintenance manual issued by International Steel. Proven methods for upkeep of stainless steel, aluminum, bronze and wood are described.

For a free copy of this manual, circle number 827 on the Reader Service Card.

Lighting catalog. The Luxo Lamp Corp. is distributing a four-page catalog describing its line of incandescent, fluorescent, combination and magnifying lamps. Most of the lamps have been specially designed for work in business offices, shops, laboratories and drafting rooms. The catalog also describes a variety of optional brackets, bases and stands.

For a free copy of this catalog, circle number 825 on the Reader Service Card.

Visual communication instruction. An instructional program which trains participants in visual communication skills, with emphasis on overhead projectors, is being conducted by Tecnifax Corp. in Holyoke, Mass. One, three and five-day programs are offered without charge to persons in education and other fields. Projection, visual concepts and the psychology of communication are basic subjects.

For a free brochure describing the program, circle number 832 on the Reader Service Card.

Catalog of craft handbooks. The Rockwell Mfg. Co. has published a catalog in which 13 handbooks covering tools and their applications are listed. Each handbook, costing $1 apiece, contains about 120 pages of complete instructions on the use of power tools, and each is fully illustrated. Two titles: "Getting the Most Out of Your Drill Press (and other power tools)"; "Practical Finishing Methods." There are also two handbooks suggesting projects.

For a free copy of the catalog containing these handbooks, circle number 820 on the Reader Service Card.

Cafeteria range. Stainless steel construction and sensitive thermostat feature a four-way range being marketed by Cecilware-Commodore Corp. The range will fry, cook, grill and broil. A catalog describing the range lists operating advantages, dimensions and prices of various models.

For a free copy, circle number 821 on the Reader Service Card.

Air conditioning your schools. The economic and educational advantages of air-conditioned schools are discussed in a booklet by Minneapolis-Honeywell, which gives case histories of four new schools which installed air conditioning. In one instance, a compact air-conditioned school cost less to build than a comparable conventional school, due to the reduction in wall areas, windows, and mechanical and electrical work.

For a free copy of this booklet, circle number 823 on the Reader Service Card.

Solving office problems. Saving time is the general theme of a booklet published by Transcopy, Inc. Titled "How to Solve Office Problems on the Spot," the booklet describes techniques of reducing dictation time, speeding communication and simplifying correspondence. The 16-page illustrated publication also lists hundreds of cost cutting ideas.

For a free copy of this booklet, circle number 854 on the Reader Service Card.

Guide to chemistry aids. The Manufacturing Chemists Assoc. has published a descriptive guide to educational publications about chemicals, chemical processes and the chemical industry. The booklets and pamphlets listed are categorized and cover specialized areas such as organic chemicals, petroleum and plastics. Each title is priced and briefly described.

For a free copy of this guide, circle number 841 on the Reader Service Card.

Tractor catalog. Two new models of the Beaver riding tractor are described in a catalog published by the Baird Machine Co. The tractors are

continued on page 124

BALDWIN CONCERT GRAND. The truly great piano requested by today's leading artists and symphony orchestras. Ebonized. Length 9'.

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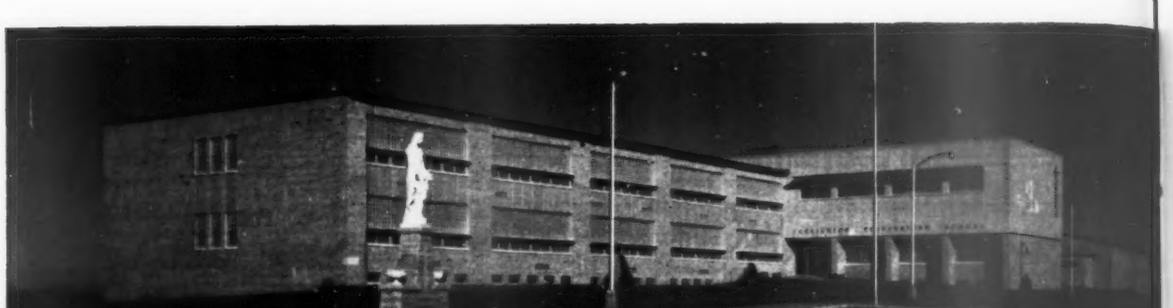
(Circle number 706 for more information)



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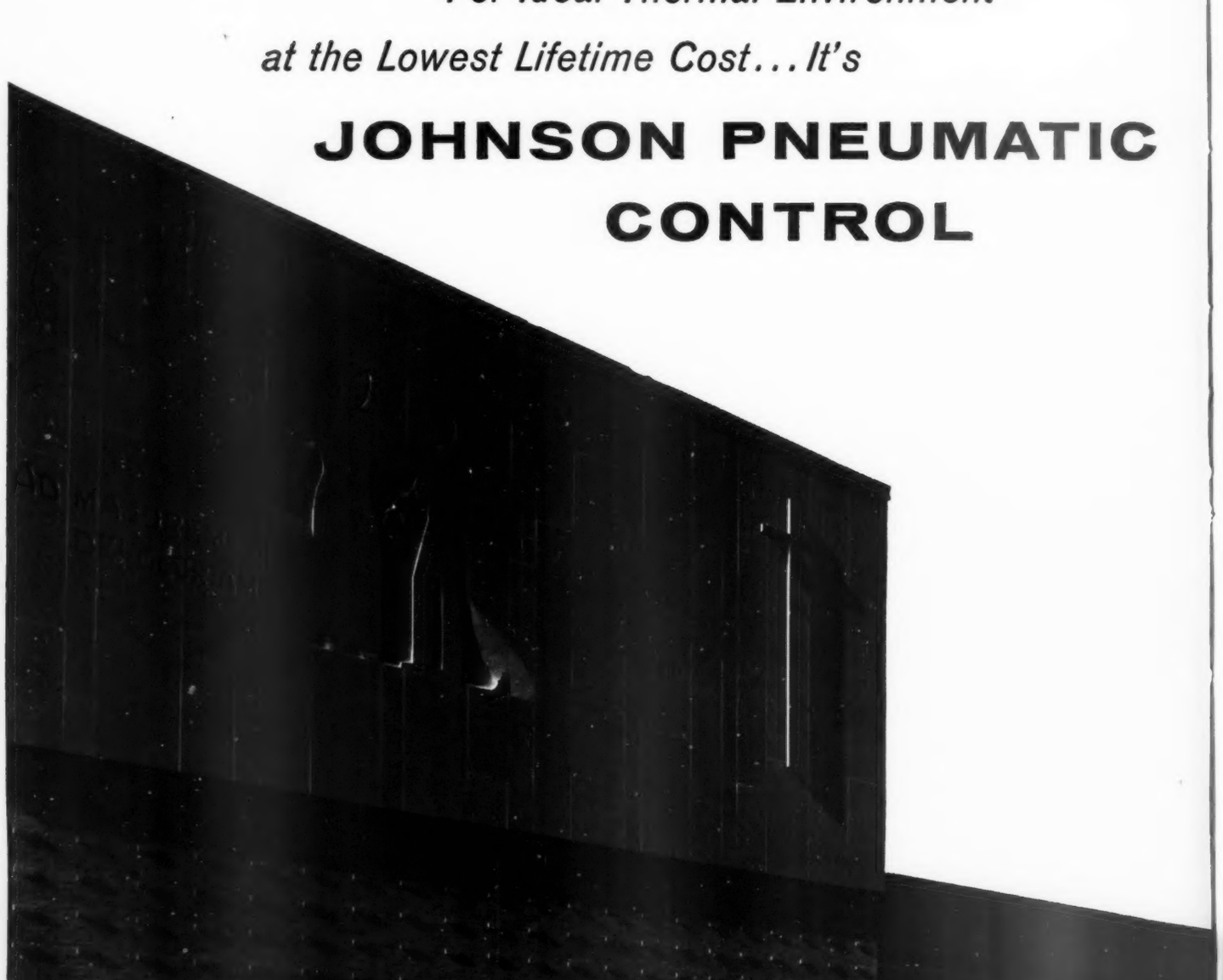

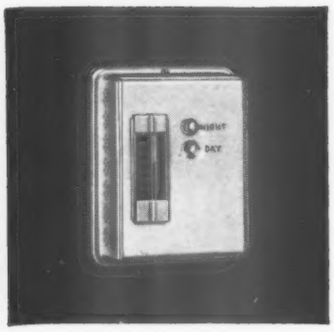

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SM WHERE TO GET HELP

A guide to useful information

ELEMENTARY EDUCATION

Penmanship. A detailed comparison of penmanship systems and handwriting instruction practices are described in a bulletin published by the University of Wisconsin. The booklet explains 19 commercial systems of teaching handwriting, but does not evaluate any of the methods.

Subjects covered include types of letters and numerals, transition from manuscript to cursive writing, instruction time, problems of the left-handed child; also, position of the body, writing instrument and paper in writing. More than 50 charts, tables and illustrations are included.

COMPARISON OF PRACTICES IN HANDWRITING. *The Handwriting Foundation, 1426 G. St., N.W. Washington 5, D.C. 122 pages. $1.50.*

LANGUAGE ARTS

Creative drama. Drama can be more closely integrated with a child's everyday living than many other art forms, according to an Office of Education pamphlet.

The pamphlet is divided into three parts. Part I defines the role of creative dramatics *with* and *for* children. Part II describes ways and means of guiding children in creative dramatics. Part III is devoted wholly to children's theaters, how they can be established and details of their organization.

DRAMA WITH AND FOR CHILDREN. *Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C. 68 pages. 30 cents.*

RESEARCH

Education in the USSR. In the spring of 1959, the Office of Education dispatched a group of specialists to the Soviet Union to study communist education. Their findings are reported in this bulletin.

"In the school classroom and workshop," reports one of the writers, "in the machine building plant, in the countryside, and wherever we went, we felt the pulse of the Soviet Government's drive to educate and train a new generation of technically skilled and scientifically literate citizens."

The authors visited several schools, and returned with general and specific information on such subjects as Soviet lesson plans, marking systems, principles and methods of instruction, promotion policies, scheduling, teacher training, etc. Large sections of the volume are devoted to scientific, mathematical and vocational-technical education.

SOVIET EDUCATION PROGRAMS. *Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C. 281 pages. $1.25.*

HIGHER EDUCATION

Financial aid. This pamphlet is a bibliography of publications and articles which discuss student financial aid for higher education.

Nine classifications cover "General and composite" (general references), "National Defense Education Act," "Costs," "Scholarships," "Fellowships," "Assistantships," "Loans," "Part-time employment," and "Foreign study."

A brief, informative note accompanies each of the 451 entries.

STUDENT FINANCIAL AID IN HIGHER EDUCATION. *Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C. 87 pages. 35 cents.*

GENERAL

Degree directory. If you've been confused by all those fancy abbreviations of academic degrees following a person's name, this book is for you.

It explains and interprets the abbreviations, for example: D. S. I. M. (Doctor of Science in Industrial Medcine), E. S. A. S. C. (Elementary School Administrative Supervisory Certificate), B. I. Arch. E. (Bachelor of Internal Architectural Engineering), and M. S. S. E. (Master of Science in Sanitary Engineering).

You may also be interested in knowing that there are seven ways to abbreviate the degree "Bachelor of Science in Elementary Education:" B.S. in Elem. Ed., B. S. El. Ed., B. S. E. E., B. S. Elem., B. S. (Elem. Ed.), B. S. in El. Ed., B. S. in Elem. Edu. There are three ways to abbreviate "Bachelor of Arts in Elementary

continued on page 23

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Education." And there are also the following degrees for which no abbreviations are listed: Bachelor of Elementary Education, Bachelor of Science in Elementary and Secondary Education, and Bachelor of Science in General Elementary Education.

The book lists several suggestions for reducing the number of degrees offered and standardizing their abbreviations.

ACADEMIC DEGREES. *Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C. 324 pages. $1.*

RADIO-TELEVISION

Bibliography. The Office of Education has published a revised edition of its earlier bibliography of radio and television titles. The new edition contains several hundred publications under the following categories: program techniques; educational uses; scripts and plays; technical aspects; periodicals; and general information.

Books which report findings of research and experimentation are also included.

RADIO AND TELEVISION. *U. S. Government Printing Office, Washington 25, D.C. 46 pages. 25 cents.*

AUDIO-VISUAL

Heredity film series. Nine films which teach the biological facts of heredity are being made available for purchase or rental by Indiana University's Audio-Visual Center.

Narrating the series is Dr. H. Burr Roney, professor of biology at the University of Houston. Dr. Roney explains such topics as reproduction and heredity, sexuality and variation, the roles of genes and chromosomes, and some fallacies about heredity. The experiments of Mendel and the question of heredity vs. environment are also covered.

The films are in black and white and run 30 minutes each.

HEREDITARY FILM SERIES. *NET Film Service, Audio-Visual Center, Indiana University, Bloomington, Ind. Purchase price, $125 each. Rental price, $5.25 each.*

VOCATIONAL EDUCATION

Advisory committees. How to organize advisory committees, and how to benefit from the services they render, are prime topics in a recent publication by the Office of Education, Trade and Industrial Branch.

"A common weakness," says the booklet, "is to appoint a committee and then rarely seek its advice or support. The schoolman should provide leadership for advisory committees, understand how to work with them, and know how to secure the benefits of their service." Author Sam W. King then tells how to proceed.

The booklet explains the various types of committees and how they function, how they are organized, and even goes into detail on how these committees should conduct their meetings. One section outlines characteristics of effective committees. Another shows how committees can help with curriculum planning, extracurricular activities, and field trips.

ORGANIZATION AND EFFECTIVE USE OF ADVISORY COMMITTEES. *Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C. 75 pages. 30 cents.*

Agriculture. This book, primarily for use when planning new construction, has been prepared as an aid where agricultural training programs require space and facilities especially for this purpose.

The guide is helpful in planning and locating the area where agriculture is to be taught; or, if a separate building is necessary or desired, it will aid in determining the best type and design of structure for both classrooms and shops.

The book includes a basic list of suggested tools and equipment. It is published by the Office of Education, and is amply illustrated.

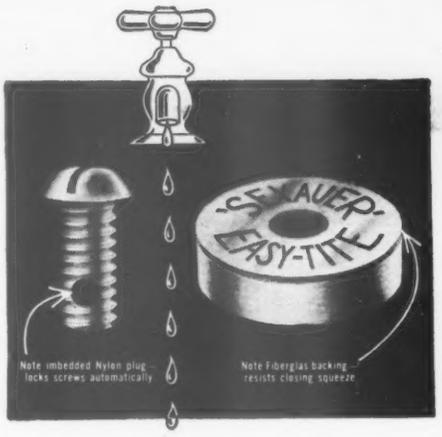
BUILDINGS, EQUIPMENT AND FACILITIES FOR VOCATIONAL AGRICULTURE EDUCATION. *Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C. 90 pages. 45 cents.*

GUIDANCE

Condensed titles for class use. Here's a series of booklets which students themselves may find useful in the classroom. These are condensations of Science Research Associates' regular guidance publications, and are designed to stimulate group discussion among teenagers.

Exploring Your Personality; Study Your Way Through School; You and Your Abilities; What Employers Want; Where Are Your Manners; Your Behavior Problems; Looking Ahead To Marriage; Getting Along With Others; Facts About Alcohol; Facts About Drug Addiction.

SCIENCE RESEARCH ASSOC., *259 East Erie St., Chicago 11, Ill. Prices vary.*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Now they have reduced this job to a smooth routine and in addition, mechanized preparation of class lists, attendance registers, report cards, test results, special listings and permanent records.

Clerks are free from hours of unproductive work. Teachers and counselors have maximum time for the real job of education. Each student's needs receives the personal attention required.

Here are some of the specific advantages Nyack High School is obtaining from their low-cost IBM machines:

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For as little as $295 a month, an IBM punched card system can ease *your* school's clerical overload, too. Get all the facts. Call your local IBM office today.

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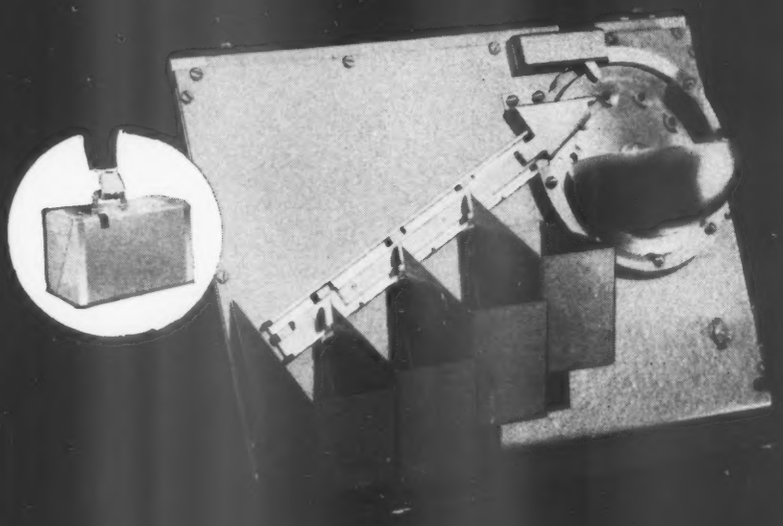

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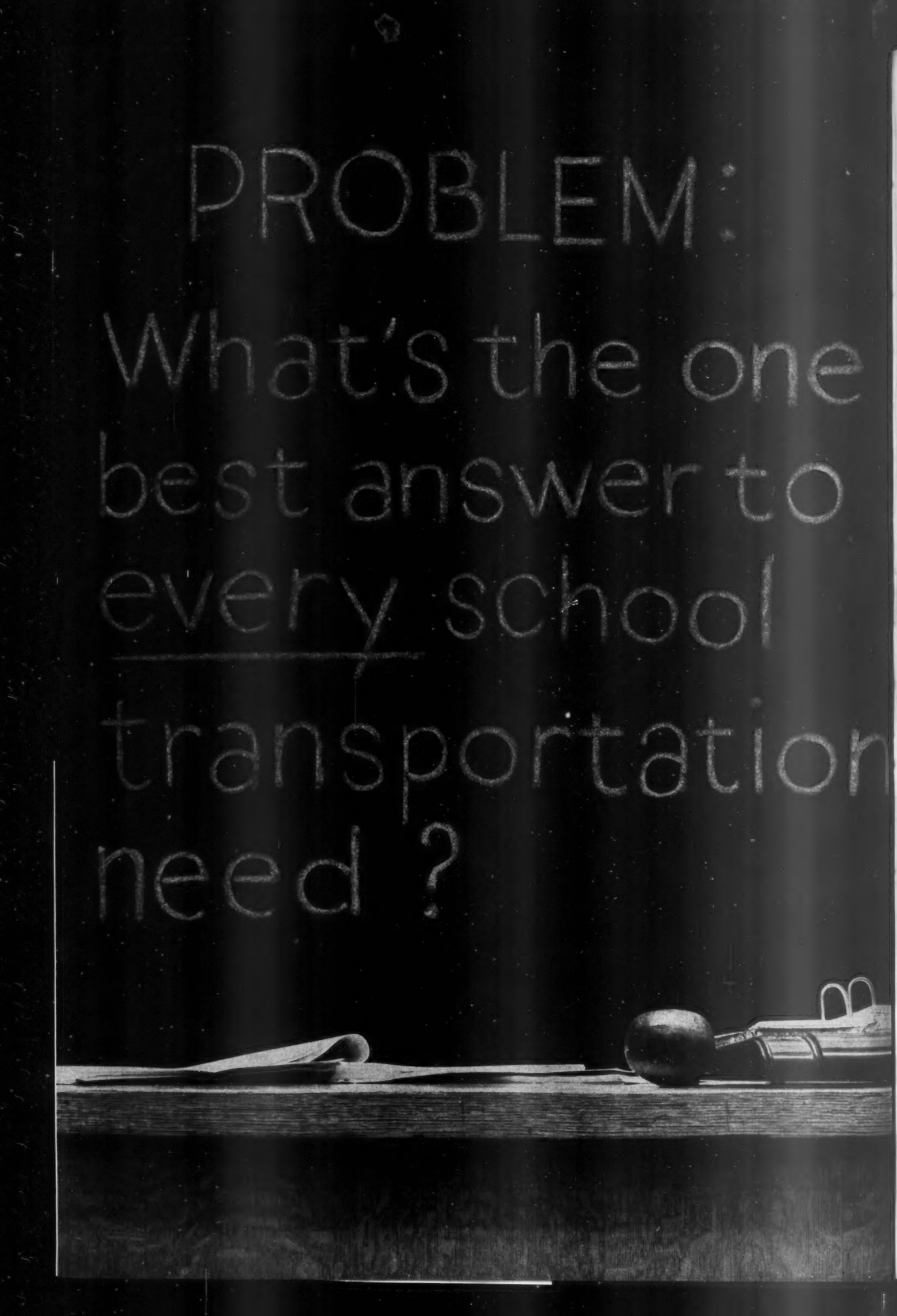
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THE VALUE BUY IN SCHOOL TRANSPORTATION

CHEVROLET

(Circle number 720 for more information)

Basic information that schoolmen can use as part of a community education program

Does an honors course penalize a student?

High grades are a key factor in college admission. Does a difficult 'honors curriculum' endanger a student's chances by lowering his class rank? Here are the results of a study of this problem.

■ ■ ■ West Hempstead, N.Y., is a community composed of highly professional groups of people. They have shown a great interest in our educational system.

With children of this background and capability, we felt a need for a curriculum that would track or "level" pupils according to their abilities. To accomplish this we established an honors level, an academic level and a basic level. And, on top of the honors level, we placed a super structure called advance placement.

Parents, however, became rightfully concerned about this. They worried that a student in an honors course, for example, might be penalized by taking the more rigorous course—that his grades might be lower because the course was more difficult. This, in turn, might affect his admission to college.

Actually, most colleges examine the student's transcript in order to interpret what each grade means. Honors courses are indicated, but parents don't always know, or accept, this fact. To set parents at ease, we wanted to see if an honors course did penalize a student.

In examining a student's record, college admissions offices are concerned with four basic criteria. One, generally, is classified as the "overall scholastic record" of the child. This is indicated quickly by his numerical rank in class, as well as his absolute grades. Next, they're interested in college board test data, or some other type of standardized test data, to indicate the student's academic aptitude, his reading potential and his general achievement. The third criterion is the school's official evaluation of that child. And fourth, of course, is the class activities and other types of recommendations that come into the college.

Now colleges do have one specific difficulty. When it comes to evaluating absolute grades, an 85 isn't always an 85. For example, some schools have minimum passing grades of 65. Others want only a 60 for passing, and some demand a 75.

In addition, colleges have the problem of trying to equate the high school itself. They must take into account the difficulty of any course a student takes. An honors course, naturally, should be more exacting than one taken in the academic or the general track.

How the study was made

We set out to discover whether it makes much difference—in grades or class rank—when a student takes an honors course rather than an academic or a basic one. We were working on the assumption that, no matter what the course, those children who are classified as college bound do just as well in an honors program as in a straight academic offering.

For purposes of this study, we divided all 273 members of the senior class into two groups—college-bound students and those who were classified as non-college-bound. We ranked *all* the students and ranked them in terms of *every subject* they took. Then we took *all* of the students and ranked them in terms of *only* the five academic subjects. Then we took just the college-bound students and ranked them on every subject that they took, and, again, on their five academic subjects only. Rank in class—and grades—were not appreciably affected *(see box opposite page)*.

We had now answered the first question of the parents. Taking an honors course would not affect a student's academic record. In fact, it would tend to help, since most colleges would give more weight to such courses.

But then another question was raised:

"Isn't it true that my child would have an easier time of it in a straight academic course?"

Many of us, in the past, believed that. But, in the few instances where we've moved children from an honors level to an academic level, about half the time the results were just the opposite. We've had, in mathe-

text continued on page 30

Purpose

Procedure

Definitions

Basic Statistical Data

Limitations

Hypothesis #1

Findings

Conclusion:

Hypothesis #2

Findings

Conclusion:

Hypothesis #3

Findings

Conclusion:

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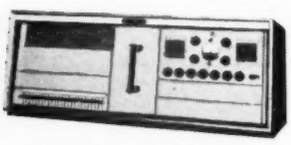

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(Circle number 717 for more information)

matics, several instances where the student actually got *lower* grades when we placed him in the lower academic program. One, ultimately, even failed the course.

For academic success there's more involved than just the course work and the teacher. You have the student's attitude toward study; you have his attitude toward his fellow students; his feeling about school in general; the attitude of his parents and how they accept the school system. There's a whole varied series of components that make for academic success.

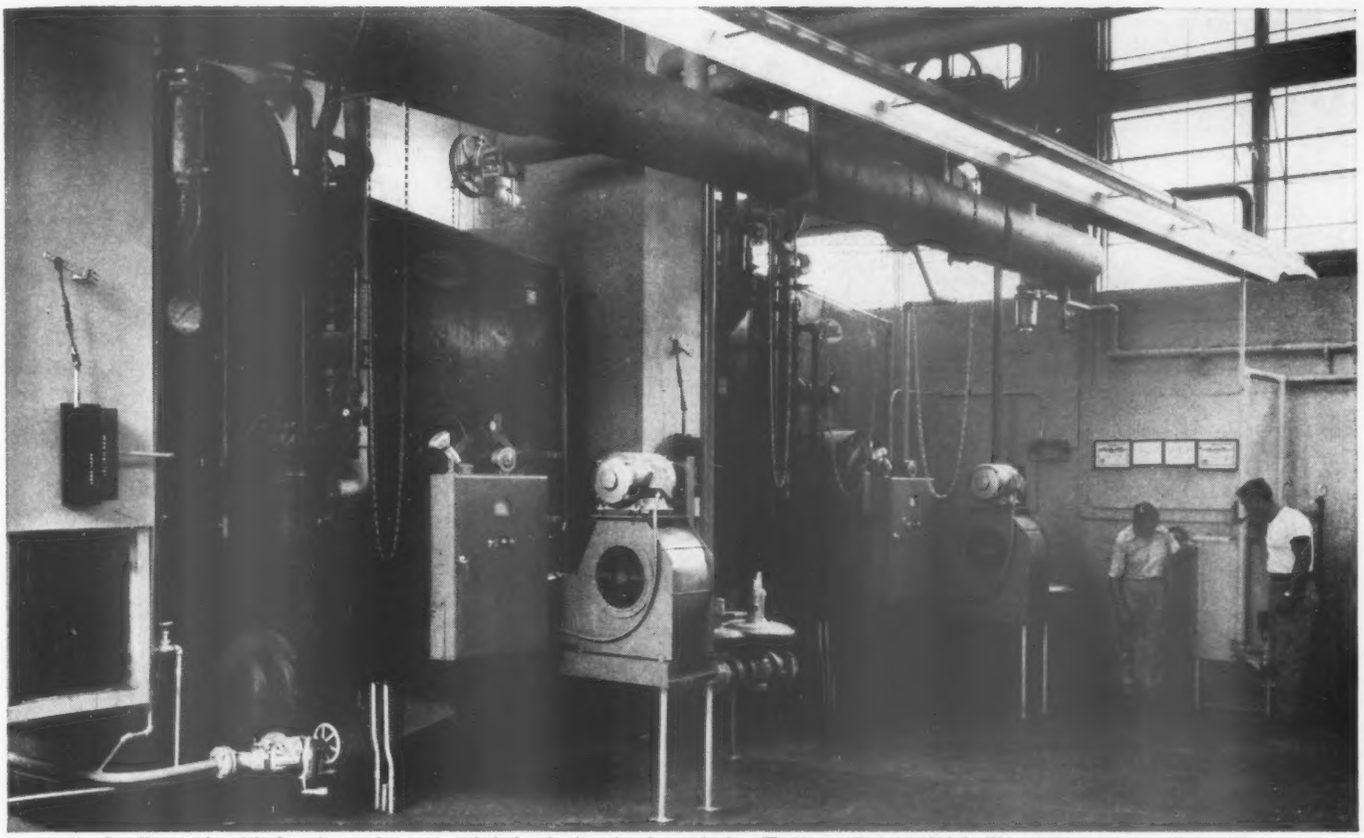
Incidentally, in doing our studies, we came to another interesting conclusion. Many parents of college-bound students encourage them to take some snap courses, especially during their senior year. Their belief is that this will help them keep their grade averages and rankings high.

But our studies have tended to show that just the opposite is true. Whether it's because of lack of interest, the temptation to slough off, or an inability to compete on that level, we find that these so-called "soft" courses—such as commercial arithmetic and typing—tend to drag down the records of academically talented students.

As a result of our studies, when there is a question as to whether a student should take straight academic courses or an honors program, we would generally place him in the honors program.

This decision is also based on the reaction of college admissions people to whom we've talked. They quite candidly admit that they will accept the student whose average may be slightly lower, if he has been taking honors courses. If this student should, by chance, get lower grades than he would have gotten in an academic class, it would not affect his college admission one iota.

So now we have our answer. The bright student is *not* penalized by taking honors courses. In terms of grades and class rank, there is little or no effect. The work is a little harder—more time consuming—but, after all, students are in school to learn. And when it comes to that all important decision by the college admissions officer, it is apparent that the student who has successfully worked his way through an honors course has a distinct advantage over his competitors. **End**



Iron Fireman forced draft gas burners firing water tube boilers that heat three large schools in Washington Township, Toledo, Ohio. Architect-Engineer: McLaughlin and Keil, Lima, Ohio. Mechanical Contractor: Johnson Plumbing & Heating Co., Toledo, Ohio. Iron Fireman Dealer: Stoker Sales & Service Co., Toledo, Ohio.

Iron Fireman forced draft firing of water tube boilers gives top performance

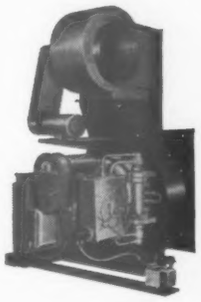
with gas, oil or gas-oil combination

Complete firing system can be bolted to boiler front — no major alteration

The Iron Fireman units shown above are complete fuel burning systems designed specifically for firing water tube steam generators. Each burner provides forced draft firing for 24,000 lb. steam per hour. This Iron Fireman burner has been selected by many boiler design engineers to fire their modern sealed, high output boilers because it provides its own forced draft, requires no stack or induced draft fan. It includes its own air register, pre-wired control system, and is completely assembled and tested at the factory. Performance and costs are accurately predictable. Backed by the largest group of fuel burning specialists in the United States and Canada.

Iron Fireman equipment cuts your installation costs substantially. In addition, you have a *unit* that has been factory engineered and carefully built for exceptional efficiency and reliability. Backed by a nation-wide service organization.

Mr. O. K. Benton of the Washington Township Board of Education, writes: "For most of last season we ran this equipment 24 hours a day, 7 days a week. Operation has been very satisfactory, with plenty of reserve power for the coldest days."



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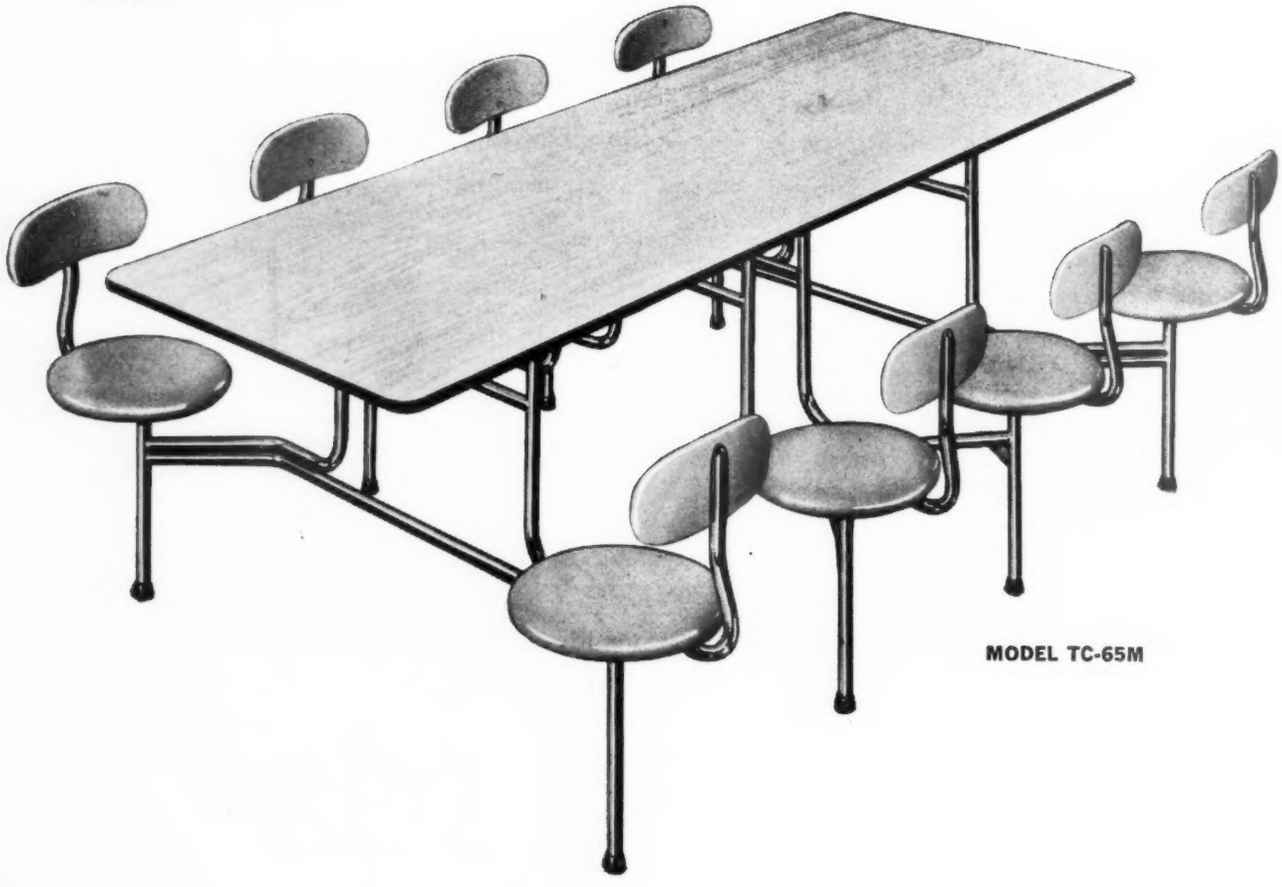
MODEL TC-65

Selected for *Industrial Design Magazine's* 7th Annual Design Review..."a lot less complicated to look at and operate..."

See the complete line for Sico Products at the AASA Convention. San Francisco booth E50-54, St. Louis booth A15-17, Philadelphia booth E22-26.



MODEL TC-65M

QUALITY FEATURES OF "FREE-WAY" SEATING

All bidding aside, there is absolutely no substitute for quality with the cost factors involved today. Only SICO Models TC-65 and TC-65M can guarantee dollar-squeezed schools economical solutions to space and individual seating problems! Feature for feature, SICO is second to none in multi-purpose or stationary "Free-Way" seating. Here's why:

SICO Saves Space—Saves up to 33% per room and still gives *individual* seating! Ends disorder and discomfort, yet TC-65 seats 12 at a 10′ table—2 more than at ordinary table with chairs! TC-65M seats 8 at a 7′ table. Both provide "Free-Way" aisle space; both end clutter, crowding, discomfort, spilling "accidents," and safety hazards.

SICO Saves Custodial Costs—TC-65 saves time because it converts in 5 seconds or less! Maintenance-free torsion bars end the use of hazardous locks, clips, latches and springs. A child can convert it. Saves high cost cleaning time, too!

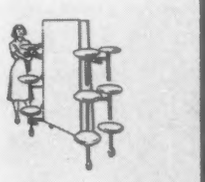
SICO is Sanitary—The "clean look" of these tables means real sanitation, safety, and dollar savings. No "jungle gym" of unsightly and dangerous pipes or tangled braces to catch dust and dirt; no banded edges, crevices or cracks to hold unsanitary substances. All parts of TC-65 models are easily accessible, free from obstructions for easy sweeping.

SICO is Versatile—TC-65 and TC-65M models mean more than just maximum use of available space. They are suited for *all* school levels and guarantee comfort, even for adult use! "Free-Way" swivel seating means occupants can turn to direction of activity any place in the room.

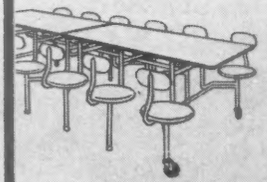
SICO Saves Maintenance Costs—14 gauge unitized steel frame and all components are electric-arc welded to withstand 2¼ tons pressure! All metal surfaces are zinc lustron plated, not coated with enamel! Tops are tough 40 pound center core with 60 pound hard edge. These units are fully guaranteed!

SICO Has Lowest Owning-Cost—The lowest in the industry because they seat more in less space, convert in less time, require little storage space, stay cleaner, have the most rugged construction!

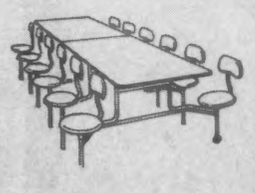
DON'T OVERLOOK THESE EXTRA ADVANTAGES TO "FREE-WAY" SEATING!



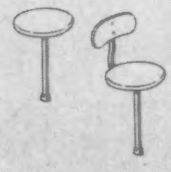
FREE-WAY HANDLING—TC-65 torsion bars *ease* table open or closed with no snapping or slamming action. Less than 30 inch closed width lets you breeze through doors on swivel casters, swish away a room full of tables in minutes.



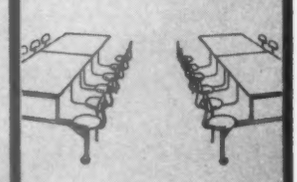
FREE-WAY SEATING—Safe with nothing to straddle, trip or step over. Pedestal seat support set to side allows complete leg freedom. Individual seating facilitates orderliness. The perfect solution for adult activities such as P.T.A., banquets, club meetings.



FREE-WAY SWIVEL SEATS—For instant, complete and orderly conversion. Lunchrooms become assembly or audio visual rooms simply by turning seats 180°. With SICO everybody gets to see, hear and participate in perfect comfort.



FREE-WAY COMFORT—Choice of stools or seats with backrest! SICO fixed dimension seating means that everyone gets a fair share of comfortable space. Stools or seats with backrest are designed to provide maximum relaxation, even over long periods of time.



FREE-WAY AISLES—Absolutely cannot disappear! Aisles are always open for full, smooth traffic flow without "accidents." SICO makes it easy to establish and maintain good order and complete control.

Get complete information on the SICO Model TC-65 or TC-65M or on the complete line of SICO products. Write today:

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can be your authority on school sanitation and maintenance problems

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CLEANS AND DISINFECTS IN ONE STEP. Wescodyne® is demonstrated to Mrs. Hilda Hops, Cafeteria Manager of the George Washington School. Mantz shows procedures that assure maximum protection, points out that Wescodyne is used throughout the school — from classroom floors to locker rooms, to infirmary.

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DIRT DISAPPEARS. All-Purpose Cleaner makes short work of dirt on all surfaces. Mantz tells Custodian Waters (center) and District Supt. Hoover how blend of soap and detergent speeds job.

A technical expert like Reuben Mantz can analyze your requirements, help you get more for your maintenance budget. He's experienced at solving problems with an efficient West Maintenance Program. He works with your staff — gives free instruction, free supervision and free periodic follow-up.

He can guarantee improved appearance and higher sanitation standards . . . and show you how to *reduce* maintenance costs! For full information write your nearest West office or West Chemical Products, Inc., 42-16 West St., Long Island City 1, N. Y. In Canada, 5621-23 Casgrain Ave., Montreal.

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WEST CHEMICAL PRODUCTS INC.

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SM NEWS OF THE SCHOOLS

A digest of current happenings in public education

Public schools not tax supported, post office says

Taxpaying citizens of Valley Stream, N.Y., were startled to learn awhile back that the Post Office Department does not consider their schools tax supported institutions.

Officials of Central High School, District No. 1, had sought second-class mailing privileges for the public relations material they send to district residents about their schools. They estimated that they could save about $2,800 yearly by mailing second class.

The Post Office Department denied the application. Citing a 50-year-old law to support its decision, postal authorities declared the district's board of education was "not considered a regularly established state institution of learning supported in whole or in part by public taxation" within the meaning of the law.

Valley Stream schoolmen are working now to have the present law amended. They have advised members of the Nassau County Superintendents' Association, congressmen, and members of the Senate Committee on post office and civil service about the situation. Since colleges, universities, newspapers, magazines, churches and fraternal organizations all qualify for second class mailings, Valley Stream officials feel public schools should not be denied the same privilege.

Teacher asks credit for watching TV

The West Springfield, Mass., school board has reserved decision on the request of a high school teacher for sixth-year "television" credit.

The teacher has been watching the nationwide educational television program, "Continental Classroom", every morning for the past three years. He thinks he should have three semester hours added to the 28 he's already earned by taking college courses. The sixth-year level—with its additional $100 annual increment—requires that teachers in West Springfield complete 30 semester hours of graduate study.

The teacher had taken no laboratory courses or tests in connection with his TV study, since local colleges do not cooperate with the program. But he had taken extensive notes during his three years of tuning in and had used some of the TV techniques in his own high school classes.

Hot battle rages over students left out in cold

There is little love lost at present between Wilmington, Del., Councilman William H. Burton and local public school officials.

Burton let loose a blast at schoolmen when he saw first and second graders shivering with cold as they huddled in the doorways of the Lore School at 8 o'clock in the morning.

Ward I. Miller, superintendent of schools, responded by explaining, "We've always had a policy of letting youngsters in early . . . and we've paid particular attention to the Lore School." The custodian at the school usually permits youngsters to enter and sit in the auditorium until 8:30 when classes begin. "Of course," said Miller, "there can be slips."

Burton charged that school administrators should be aware of such slips when they occur. He declared his intention to continue voicing loud criticism until his term of office expires.

Seventh grade math course—for parents only

In Jefferson County, Colo., parents have no trouble with the fractions, decimals and percents studied by their seventh graders in math class. What throws them are the new and unfamiliar concepts included in the

continued on page 38

Too good to miss . . .

Grope . . . Parents all over the nation seem to be groping for help in dealing with their teenage children. Now Hollywood High School has come up with an adult education course that seems to sum up the problem quite nicely. The title of the course is, "Attaining peaceful co-existence with our teenagers."

Soap . . . The Denver public schools have instituted a new "soap at all times policy." This fateful decision came after a harassed mother wrote about the lack of soap at one high school. She learned that it was a custodial "policy" at the school to withhold soap when it was wasted in the washrooms. Under the new program, there will be plenty of soap—but it will be served up in dispensers, rather than bars.

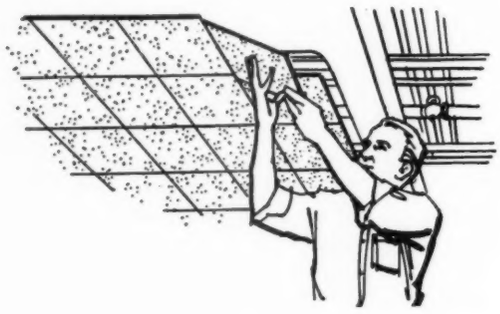
Nope . . . When the headmaster of a school in Newark, England, asked his pupils if they liked television, the overwhelming majority said, "Nope." Headmaster Walter Bond reported that better than 75% of his students requested extra homework to use up the time they once spent in front of their television sets.

Dope . . . When first-quarter test results indicated that almost 10% of the students at Kent State University, Kent, Ohio, had flunked, authorities wondered if they were getting the wrong dope. On investigation, they found a dope all right—a calculating machine that had flipped its digits. The machine is supposed to calculate each student's overall grade average. In this case, only the machine got a failing grade.

How Acoustical Fire Guard saved this school $7000

New Armstrong Acoustical Fire Guard—the first time-design-rated acoustical tile—saved $7000 in building costs and gave Crawfordsville Junior High School excellent acoustical qualities and all the benefits of a fire-retardant ceiling.

There are 29,000 square feet of Fissured Acoustical Fire Guard in the Crawfordsville Junior High School. This ceiling is used in those parts of the building that require two- and three-hour beam protection ratings under the Indiana code. The unrated parts of the building have ceilings of Armstrong Fissured Travertone. The patterns match.

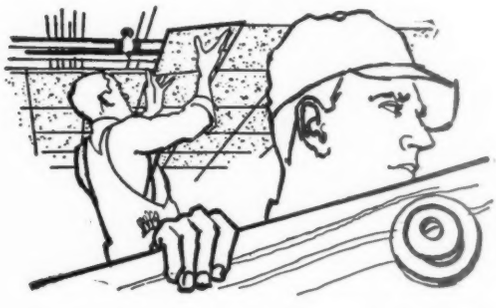


Acoustical Fire Guard saves money because it rules out the need for costly intermediate fire protection. You don't have to pay for extra concrete, lath, plaster, spray-on insulation—or water. Labor costs are reduced correspondingly. One less operation is needed.

The original specification for the Crawfordsville Junior High School was mineral tile cemented to gypsum board plus a 4" U.L. blanket. This would have cost $7000 more than the Acoustical Fire Guard ceiling that was finally chosen.

Acoustical Fire Guard is installed by a completely "dry" method. Other building trades don't have to mark time waiting for the interior to dry. It can also save time on remodeling projects. "Dry" construction can be done during or between school hours.

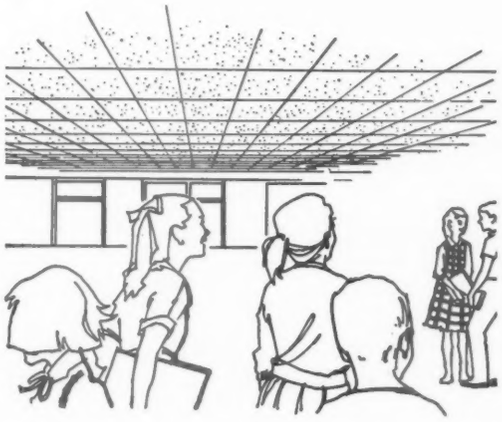
Most important, Acoustical Fire Guard helps check the spread of fire. Its capacity to resist flames and heat—from one to four hours—can prevent serious tragedy. In the last five years, there has been an average of **twelve major school fires each day.** Daily property loss: $73,000.



The Crawfordsville Junior High School in central Indiana has an Acoustical Fire Guard ceiling in the Fissured design.

Superintendent: Mark Caress.
Architect: Everett I. Brown Company, Indianapolis.
General contractor: Karl H. Kettlehut, Lafayette.
Acoustical contractor: Noffke Brothers, Terre Haute.

The majority of these fires started in classrooms. An Acoustical Fire Guard ceiling in the classrooms of your school will not prevent fire. But it can help to contain the fire. It is the first acoustical ceiling tile to be given time-design ratings from Underwriters' Laboratories, Inc.



Acoustical Fire Guard tile is available in three designs: Fissured, the popular Classic, and Full Random.

For more information about new Armstrong Acoustical Fire Guard, consult your school architect or your Armstrong acoustical contractor. He's in the Yellow Pages. Or you can write Armstrong Cork Company, 4203 Ross Street, Lancaster, Pennsylvania.

Now Armstrong announces a completely new Acoustical Fire Guard grid system ceiling

The new Acoustical Fire Guard lay-in ceiling is more economical than other finished ceilings that provide rated protection for structural steel. In most cases, it will cost even less than an ordinary plaster ceiling on metal lath.

Like Acoustical Fire Guard tile, it can save up to two months' time and up to 30¢ per sq. ft. construction cost. In addition, its exclusive exposed grid system provides fast installation.

This new exposed grid ceiling system has been given an official beam protection rating of three hours from Underwriters' Laboratories, Inc.

Armstrong ACOUSTICAL CEILINGS

First in fire-retardant acoustical ceilings

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course: the "seven system," "commutative property," "associative and distributive properties," "non-metric geometry," "deductive proof and theory."

So they're doing the only thing they can—taking the same course at night in order to keep up with their offspring.

Parents use the same textbooks in their evening classes, taught by regular junior high math teachers. Sessions are held once a week for 10 weeks. Tuition is $5 per person. There are five classes of parents enrolled now and a sixth class will be formed shortly.

The new course, "Introduction to Modern Math," began last fall for all the 2,669 seventh graders in the county's schools. It was developed by the School Mathematics Study Group at Yale University.

Ban on free textbooks termed 'false economy'

A proposal by a Florida legislator that the distribution of free textbooks be discontinued throughout the state brought a quick retort from Thomas Bailey, state school superintendent.

"False economy," he said, "to spend millions for quality education and then quibble about one of the basic tools of learning." Bailey said further that there is no way to force parents to buy textbooks for their youngsters. "The only way to guarantee that every child has a book is for the state to provide it," he added.

Bailey calls inadequate the present state appropriation of $5 million for textbooks over a two-year period. He is asking the 1961 legislature for $8.5 million to cover textbook costs during the next two years.

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Fill your *every* need for efficiency, comfort and economy from Mitchell's *complete* selection of quality-engineered tables, stands, risers and stages. Your Mitchell representative will be glad to show how you and your budget will be ahead. Send coupon for detailed information.

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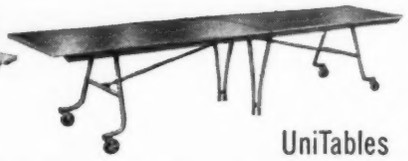
Make your table moving easier, faster, better . . . and save time, labor, and money doing it.

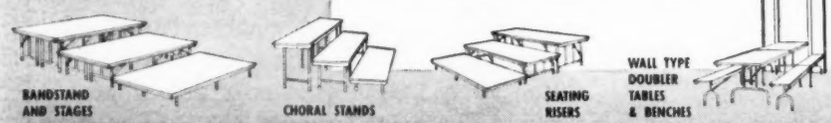
PorTables

Get versatility and utility with Mitchell's smooth-sure action in this "Fold and Roll" table and bench set . . . at your finger-tip command.



UniTables

Reduce change-over time from minutes to moments with this ingenious Mitchell "Fold and Roll" table. Ruggedly constructed for maximum durability.



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Schools save money with cooperative buying

Twenty Missouri school districts in St. Louis county have cut costs through cooperative buying of supplies and equipment.

Under the plan, begun in 1952, the district business managers decide in concert on what and how much to buy. Following receipt of bids and testing of samples, they okay the purchase of items from particular sellers.

Purchase orders from individual districts are grouped by item before being sent out. The items ordered, together with invoices, are forwarded by the seller to each district.

The schools have eliminated a great deal of paperwork with their purchasing system. One estimate of savings on duplicating paper alone, for all the districts involved, runs as high as $16,000 annually.

English teaching 'grievously deficient,' study finds

Something had better be done soon about the dismal condition of English teaching in our public schools. That's the gist of a comprehensive critique on the subject done by the National Council of Teachers of English. Here are some of the danger signs uncovered by the council in its nation-wide study:

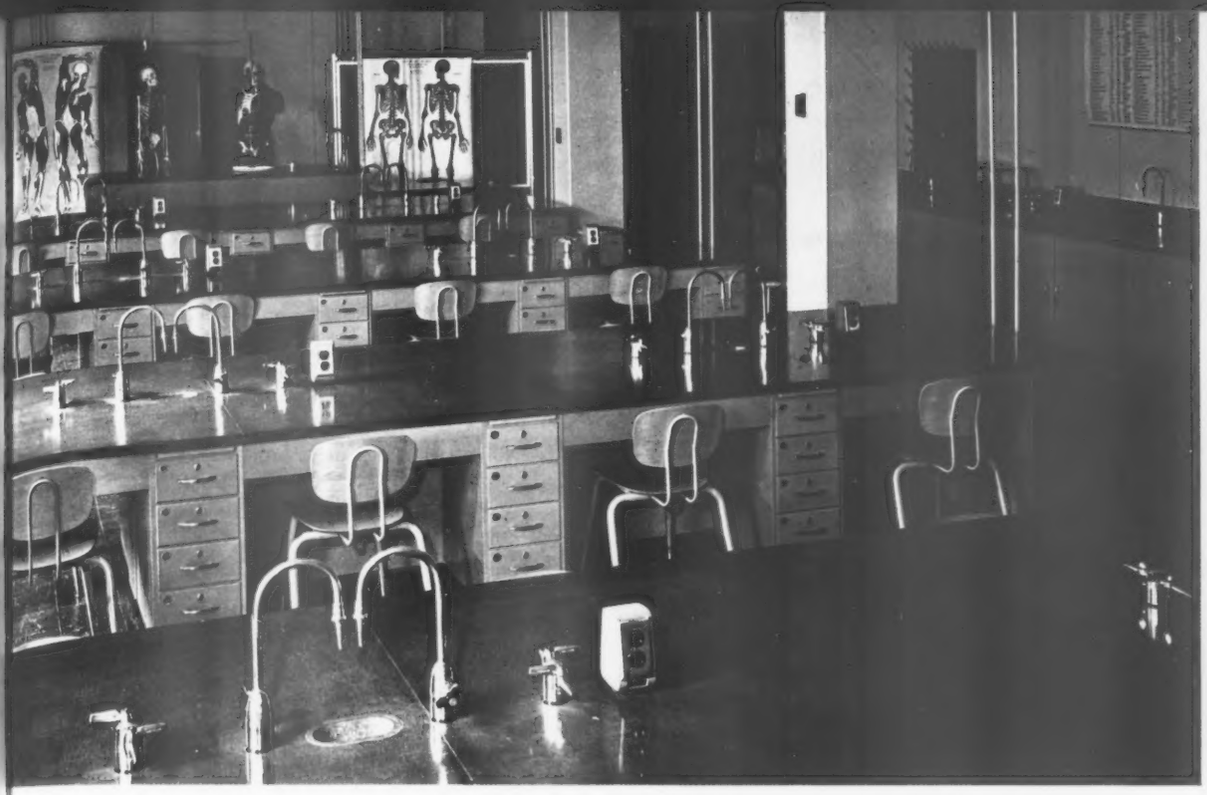
Last year, 150,000 students failed college entrance exams in English.

Remedial work in English is given by 70% of all colleges and universities in the nation.

Nineteen states require no special training in English for certified elementary teachers.

High school teachers in 16 states can teach English after as few as four one-semester courses in their chosen subject.

The council warns that most of the



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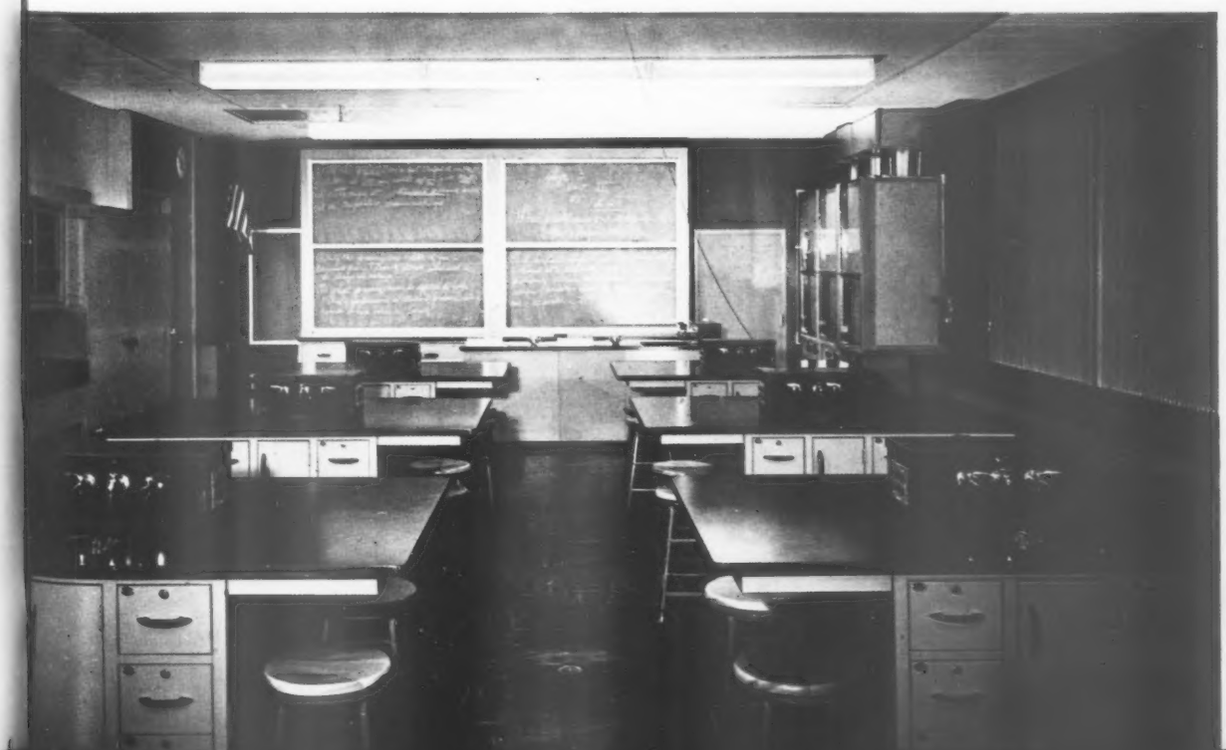

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current crop of new high school English teachers "is simply not equipped . . . to deal with problems of teaching the language and composition." It says further that demand for teachers now outstrips supply by 27%, while teaching conditions in our country's high schools continue to worsen. Some English instructors now handle up to 175 students a week.

What's to be done? Large scale retraining of teachers, and a nation-wide revamping of the curriculum, is the council's answer. In addition, it asks that institutes similar to those for science, language study and teaching under the National Defense Education Act, be established for English.

Better jobs, more pay lure men from teaching

Intellectually superior men teachers —who like their profession—continue to drift into better paying occupations according to a Teachers College study of Air Force veterans who entered teaching after World War II.

Those who have abandoned teaching have increased their income by 25%, but three-quarters of them would be willing to return "if conditions improved." Most of those queried in the study agreed that higher salaries would draw men back to teaching. But smaller classes, better materials and equipment and fewer non-teaching duties were also cited as important lures.

The study was conducted among 658 men who had participated in an aptitude test at Columbia University in 1955. Since that time, 200 of them have left teaching. Of the 458 remaining, 332 are school and college teachers and 126 are administrators.

Classroom pinch worse by 7,000

Nearly 2 million students throughout the nation are getting shortchanged educationally because of the lack of adequate classrooms in our public schools.

The classroom shortage rose to 142,100 in 1960 from 135,200 the year before, according to a report just released by the Office of Education. School enrollment is at a record 35.3 million pupils, but 1,868,000 youngsters are forced to use overcrowded classrooms. Of that number, 685,000 attend school on half-day sessions.

In 1960, some 70,000 new classrooms were built, with about the same

continued on page 45

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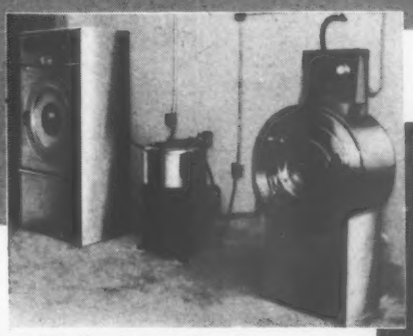

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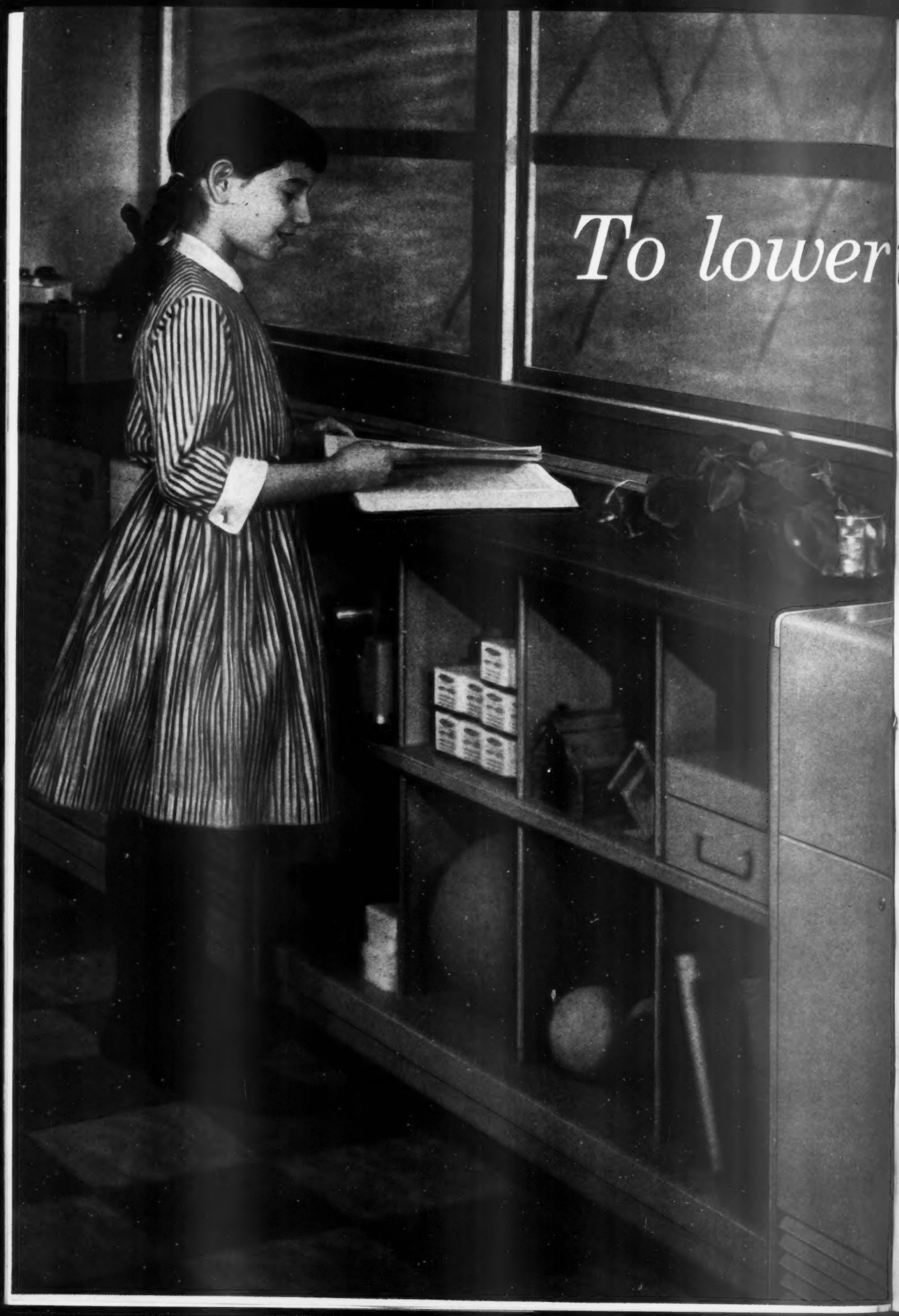
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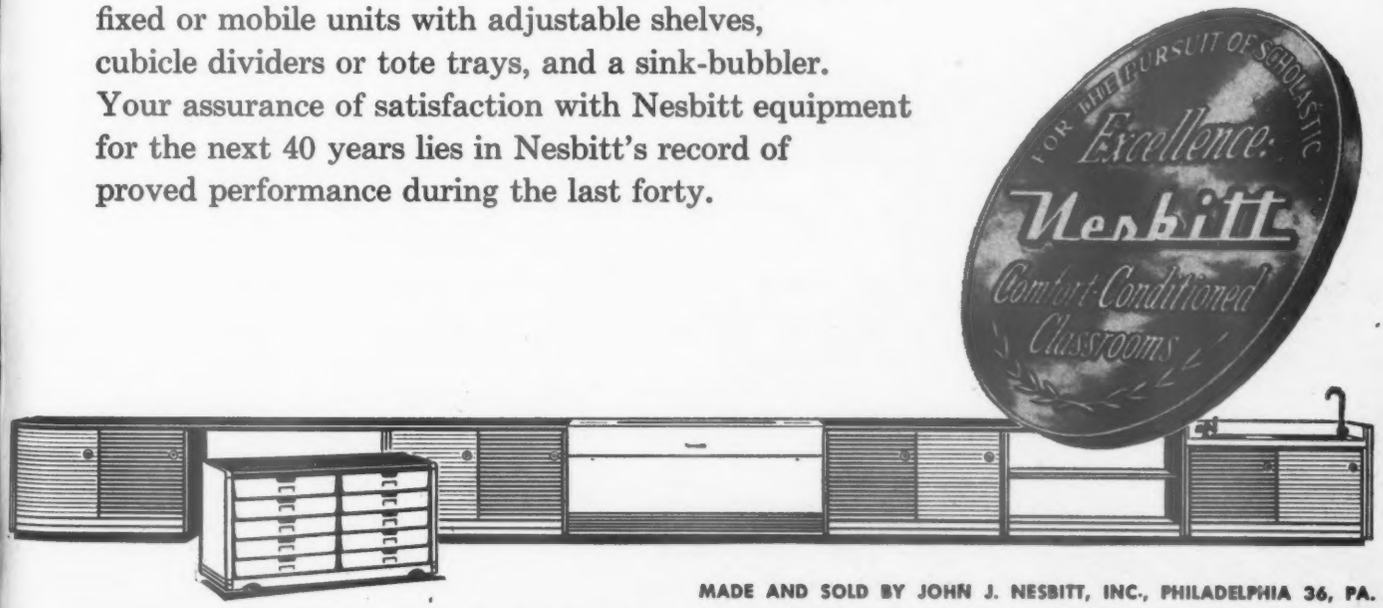
the cost of learning

Teaching is judged today, more than ever before, in terms of learning production and cost-per-pupil. Pupils who *participate* learn more; and a controlled thermal environment in the individual classrooms promotes pupil readiness and learning efficiency. Schools built for the next 40 years will include, as basic equipment, the mechanical means for heating, ventilating, and natural-air cooling—and when the outdoor air will get too warm for natural cooling, mechanical cooling and dehumidifying will be added. Flexible utility cabinets—teaching tools that encourage pupil participation—will also be required. To match both these needs—for comfort and utility—Nesbitt offers the colorful 600 Line, a window-wall ensemble that includes a Syncretizer (for normal school terms or year-round use), Wind-o-line radiation if required, and versatile storage cabinets in various lengths and graded heights—featuring open or closed, fixed or mobile units with adjustable shelves, cubicle dividers or tote trays, and a sink-bubbler. Your assurance of satisfaction with Nesbitt equipment for the next 40 years lies in Nesbitt's record of proved performance during the last forty.

Consider carefully the design of your new school building

By wise planning for the ultimate use of year-round air conditioning, it is often possible to save enough on construction and eventual operating costs to assure a completely air-conditioned school for no more than the cost of one with heating, ventilating and natural-air cooling. Talk with a Nesbitt representative, or send for Publication SP-1060.



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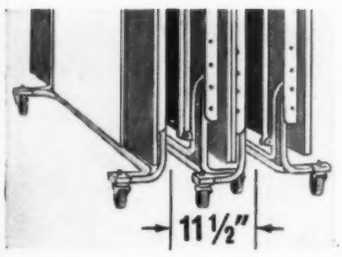

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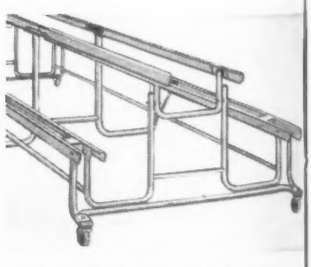

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number scheduled for completion by the end of this year.

The number of classroom teachers —elementary and secondary—increased by 55,000 to 1,410,000 during 1960. What's more, the number of teachers who have not yet met full certification standards dropped by 5.6% during the same period. But there are still 91,000 such teachers—6.5% of the total—conducting classes in our schools.

One Virginia teacher in five lacks degree

More than one-fifth of Virginia's 32,130 classroom teachers have no college degrees, reports the Virginia Education Association.

Conditions have improved since the association began keeping records eight years ago. Substandard teachers in county systems have dropped from 34% to 25% during that time. In city systems, the drop has been from 28% to 20%.

But the association still sees much room for improvement. Here are some of the facts uncovered in its recent survey of 96 counties and 31 cities:

One-quarter of the county teachers lack degrees; only 11% of teachers in city schools are without them.

Sixteen percent of city teachers have master's degrees—twice that of county teachers.

County teachers with substandard certificates number 1,771; city teachers, 269.

There are but seven teachers in Virginia with Ph.D.'s, while 29 have only high school diplomas. Eight years ago, there were 172 teachers with only high school diplomas throughout the state.

Schools in McKeesport, Pa. hold two dual programs

Because of a wrangle about religious baccalaureate programs in McKeesport, Pa., the school board has decreed that two programs be held—neither with clergymen as speakers.

The board's own graduation exercises will include awards presentations and an address by a lay speaker. A second program, sponsored by the Greater McKeesport Ministerial Association, will be run by at least two religious groups. But, again, a lay speaker will give the address.

McKeesport's troubles began in 1959 when many Roman Catholic graduates refused to attend exercises because a minister was chosen as

continued on page 48

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HURLBUT W. SMITH JUNIOR HIGH SCHOOL, SYRACUSE, NEW YORK

Designed for 800 students, this school consists of 39 classrooms, including science rooms, art rooms, home economics classrooms and laboratories, music rooms and shops. Each classroom has a separate workroom space. Also provided is a library, administrative office, health and guidance facilities, two cafeterias, a large gymnasium and separate locker rooms for boys and girls. The auditorium seats 830. Service areas include a kitchen, boiler room and general storage. Dimensions: area—123,908 sq. ft.; cubage—1,792,762 cu. ft. *Architects:* **Sargent, Webster, Crenshaw & Folley, A.I.A., Syracuse, New York**

Another new school selects...

NEW CARRIER HEATING AND VENTILATING SYSTEM THAT PROVIDES 8 ADVANTAGES YET COSTS LESS

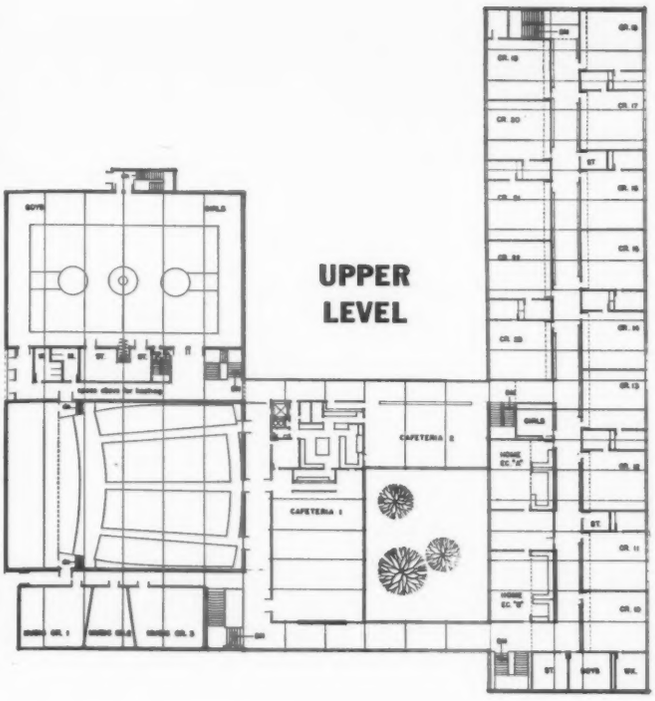
This modern junior high school provides another excellent example of how any new school can enjoy a superior heating and ventilating system at less than the cost of ordinary unit ventilators. And this new kind of system is ready for immediate conversion to year-round air conditioning with the simple addition of packaged refrigeration equipment in the machine room.

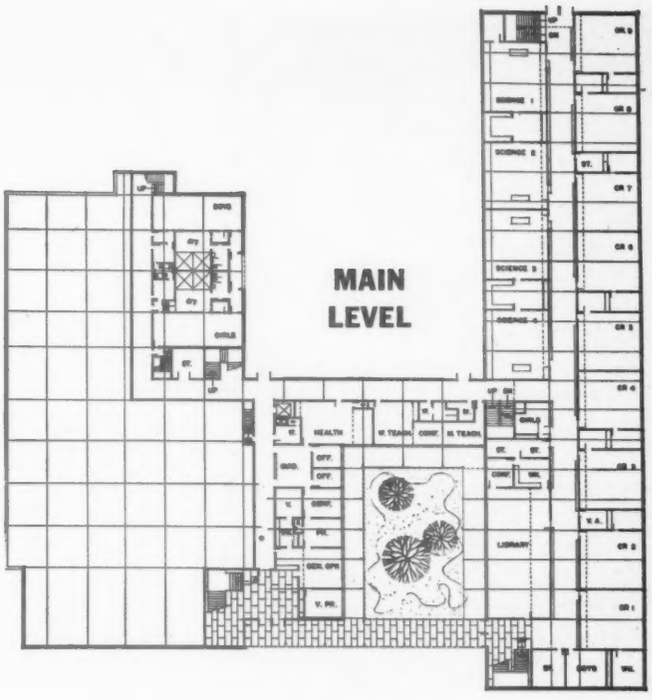
In their recent planning of new schools the architects considered unit ventilators and several popular central station systems. They carefully compared the performance characteristics, maintenance requirements, first cost and operating cost of each method. Their conclusion: The new Carrier 37E All-Air Weathermaster* System provides the highest quality automatic heating and ventilation currently available to schools. It is the easiest to convert to complete year-round air conditioning. It costs 10% less, installed, than the next best method. And it costs less to operate and to maintain than other automatic systems.

The eight important advantages of the 37E Weathermaster System which led to these conclusions are listed on the opposite page. They are unique because Carrier 37E units are the only room terminals which combine the performance benefits of the induction principle with either high or low velocity air distribution and the superiorities inherent in all central station systems.

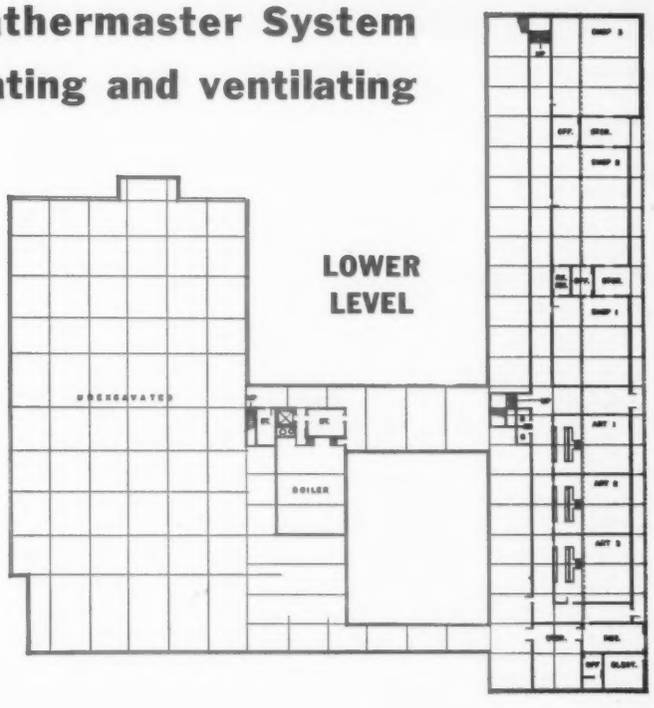
If you are planning a new school, it should be well worth your while to look into the Carrier 37E All-Air Weathermaster System—either for heating and ventilation only, or with an eye to future air conditioning. The nearby Carrier office will be glad to give you, your architect and consulting engineer complete facts on the system. Or write to Carrier Air Conditioning Company, Syracuse 1, New York.

*Reg. U.S. Pat. Off.





Only the Carrier 37E All-Air Weathermaster System offers these 8 advantages for heating and ventilating



1 Positive ventilation and air circulation under all conditions and seasons for improved odor dilution. Constant air volume from units.

2 Quieter operation—no fans or other moving equipment in classrooms, with all powered equipment located in machine room for easy servicing.

3 Superior air filtering at central station—minimum filter maintenance.

4 No costly wall openings, subject to rain and wind leakage, required in classrooms for ventilation air.

5 No operation of fans required for night and week-end heating, with gravity heating handling the load.

6 Individual temperature control in every room solves zoning problems; air damper assures easy initial system balancing, requires no adjustments thereafter.

7 Valuable classroom floor and wall space is saved by the compact units; cabinet only eight inches deep.

8 Easily and economically converts to full-year-round air conditioning at any future date with simple addition of packaged water chilling machine in central apparatus room. No revision of classroom units, controls or air ducts required. Condensate drains not needed. Nominal conversion cost about 65c per sq. ft., or less.

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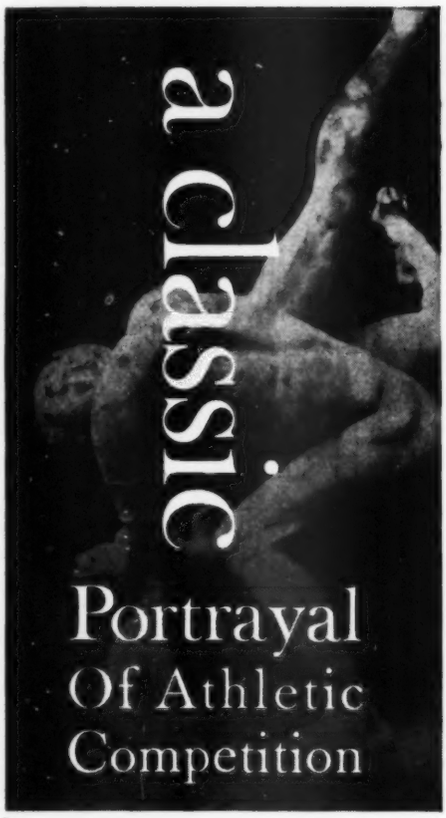

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speaker. The board subsequently ruled that religious speakers be barred from future programs on the grounds that school facilities could not be used for religious purposes.

When the ministerial association objected, the board agreed that it might hold its own separate commencement exercises at the time of graduation.

Forged records bar teacher for life

Because he "wanted to be a teacher very badly," Lindsey M. James may never teach school again.

James had been teaching in Chicago since March, 1957, before it was found that he had forged college records in order to get his teaching certificate. Sentenced to a year in jail, he has learned that his conviction will probably bar him permanently from the teaching profession.

No complaint had ever been made about his teaching ability. In fact, he was well liked by both teachers and students. But school officials, making a routine check of his marine corps service record, discovered that he had forged his bachelor's and master's degrees. Actually, he had no degree at all, having flunked out of Fisk University, Nashville, Tenn., after two years.

Teachers in Wilmington schools can 'moonlight'

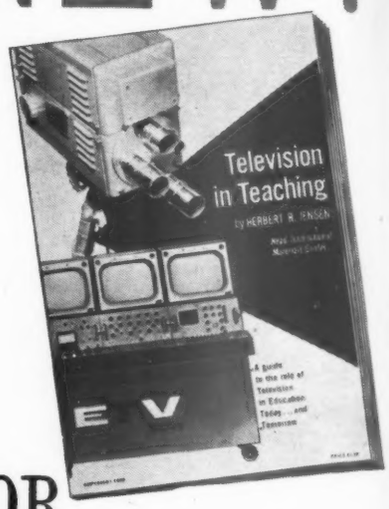
Teachers in the Wilmington, Del., public schools can hold second jobs provided off-duty work doesn't interfere with their teaching. Superintendent Ward I. Miller made that clear at a local teachers' association meeting while clarifying earlier remarks about "moonlighting" to which teachers had objected.

Miller's complaint had been that it was becoming increasingly difficult to find available teachers for textbook selection, curriculum planning, review of audio-visual materials and other extra-classroom duties. The school system is willing to pay for such extra work—done on Saturdays and during summer vacations—but it can't find teachers to handle it. Most of them already have obligations to part-time employers after school hours.

Miller is not critical of teachers who hold second jobs, "as long as teachers' salaries are as low as they are and people want a higher standard of living." He thinks, though, that there is a

continued on page 52

NEW!



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GMC V-6 engines are designed to produce full power output over a broad range at low engine speeds for top performance. You get fast, sure starts and consistently meet all schedules. In addition, you save wear and tear on the entire bus and driver. You increase operating efficiency, reduce costs.

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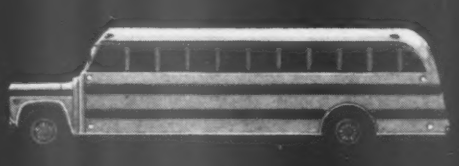

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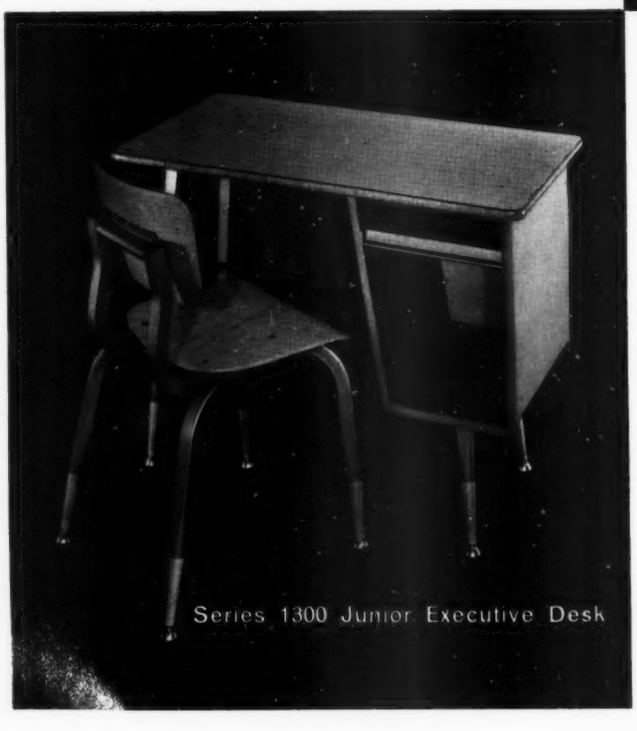

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way out: "Pay $11,000 or $12,000 on a 12-month contract and say 'that's your job.'"

Industry-backed program keeps teachers informed

Fifty high school science teachers have been offering their students material too new for the textbooks, as a result of attending an industry-sponsored in-service training program at Oklahoma's University of Tulsa.

The teachers—who each receive $250 and college credit for attending the course—hear outstanding scientists discuss the latest developments in a wide range of scientific areas, from wildlife conservation to oceanography and space medicine. Many have been able to prepare lessons for their high school classes directly from notes taken at the Tulsa course.

The cost of the program, including lecture fees and administrative expense, is paid by the Esso Education Foundation. Similar programs, patterned to fit the needs of secondary science teachers in their regions, are underway at the University of Pittsburgh, Illinois Institute of Technology and Centenary College of Louisiana.

Reaction to the Tulsa course has been strongly favorable. While some of the teachers feel the material is a little advanced for their students, they think it helps familiarize them beforehand with the kind of work they will cope with in college. Other teachers have found the material most helpful in steering their students toward further science study.

Junior high condemned, hotel owners 'clean up'

Eight years ago, residents of Glenwood Springs, Colo., were prepared to abandon their 44-year-old junior high school. The building violated the state's safety code. It was structurally unsound and not worth renovating.

But a 50% population increase over a 10-year period forced the continued use of the school.

Last December, the school district proposed a 1.2 million bond issue for a new junior high, plus a new elementary school and improvements on several other buildings. Taxpayers defeated the issue.

In January, the old school was condemned. It violated the safety code in 23 different ways. The school board ordered that no more classes be held in the structure.

A proposal to run double-class shifts at the senior high was rejected because teacher and bus schedules could not be worked out. Use of local churches for classes was judged a poor solution.

The latest word is that classes will be held in a popular resort hotel. "If the school board will pay all expenses," says the manager, "I'm sure the hotel owners won't mind."

District suffers from too much money

Schoolmen and city officials in Yonkers, N.Y., are wondering what to do with the $100,000 left over from their most recent school bond issue.

The school system was able to save that much of a $1,250,000 appropriation voted for the rebuilding of Public School 27.

City Manager Charles L. Curran wants the money to go to the city treasury, but there may be some legal details to be ironed out first. Superintendent Stanley S. Wynstra and school board members would like to use part of the surplus, about $15,000, to build a cafeteria in the school.

Right now, the money's not doing anyone any good.

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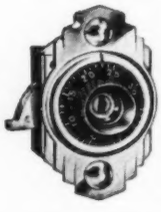

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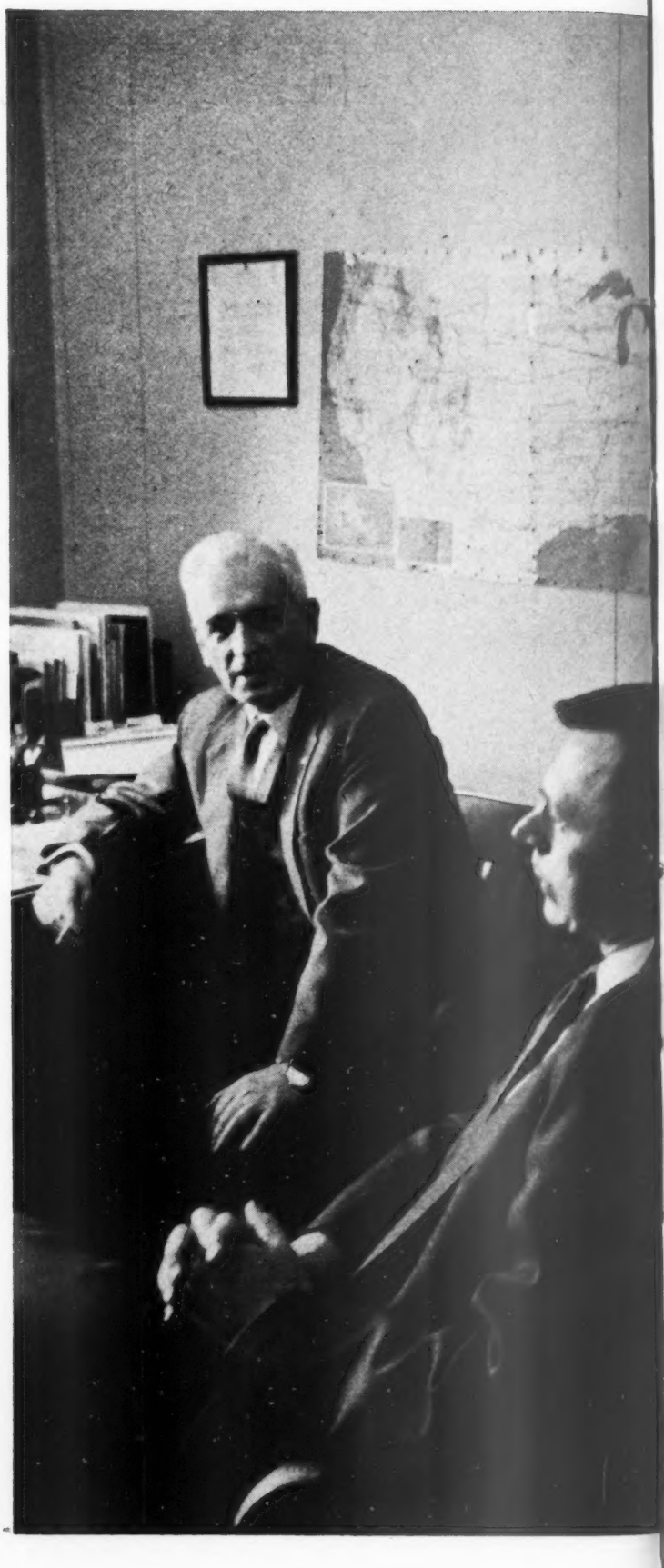
Establishing a community college is neither difficult nor overly expensive. But it does take careful planning. Here, two experts tell what you should do first, how and where to get teachers, and how much it will cost.

How your district can start a COMMUNITY COLLEGE



■ ■ ■ If your district needs a junior college, the time to get started on it is now.

Last month, an editorial appeared in SCHOOL MANAGEMENT (*see page 37*), urging local school boards to face and accept a new challenge—the education of youth in the first two years of college—the 13th and 14th grades.

The community college movement in the United States is growing at a furious pace. Five years ago, fewer than 350,000 students attended 483 public and private junior colleges. Last year, almost 1 million students were enrolled in 677 such institutions.

Not every school district needs—or can profitably use—a community college. Some have too few students. Others are located in areas where college facilities are more than adequate to take care of their needs. In still other cases, the states have taken over the job.

But the facts are these: The need for post-high school education is increasing and our present colleges are hardly able to handle the present load—much less the huge numbers of students who will be knocking on their doors in the next 10 years.

If your district needs a junior college—or if you think it does—remember this: Even if you start planning one today, you cannot properly open it until at least September, 1962. In other words, it is already too late to help your present senior class, and, if you wait another few months to get started, even the present juniors will not be able to benefit.

How do you start a junior college? Two steps must come before all others. First, you must establish that your district can legally concern itself with the education of students beyond the high school. Then you must be certain that your public needs and wants such an institution.

In the following report from a tape-recorded interview, two experts outline some of the steps to follow in setting up a community college. They discuss the number of students needed, the facilities, the curriculum, faculty and goals.

D. G. Morrison, specialist for community-junior colleges, in the division of higher education of the Office of Education, has been an active consultant in the formation of junior colleges throughout the nation. He is the co-author, with Dr. S. V. Martorana, chief, state and regional organization of higher education, of the recent Office of Education publication, "Criteria for the Establishment of 2-year Colleges."

Robert Novak is dean of the Prince George's Community College, Suitland, Md. He helped to establish the institution in 1958, and has headed it ever since.

D. G. Morrison, U.S. Office of Education, and Robert Novak, Prince George's Community College.

Q *If a school district wants to consider the establishment of a community college, how can it get started?*

MORRISON: From our experience with quite a number of communities, the first thing to decide is whether there is a need for the institution. I think this is always a fundamental thing to ask.

NOVAK: In Prince George's County, a group of citizens came to the superintendent because they felt that not enough students were able to get into four-year colleges. The superintendent took the matter to the school board and the board set up a 15-member advisory committee to study the need for a junior college in the community.

Q. What do you mean by need?

NOVAK: We asked students if they would be interested in attending such a college if it were located in this particular area.

Q. So you were really surveying how many students you had available?

NOVAK: And how many students would consider going to a junior college if it were started.

Q. Did you define what courses might be available to the students?

NOVAK: Yes. We assumed that we would have transfer programs and terminal programs (*see box page 58*). We said we probably would offer pre-teacher education, liberal arts, pre-engineering, and business as transfer programs and such terminal programs as secretarial science, electronics and courses of that type when the need arose. We don't have any terminal programs in our college so far.

Q. Were you interested basically only in attracting present high school students into the college?

NOVAK: I think basically we were interested in encouraging the young high school graduates to come. If you can get them, then you create the feeling of a college atmosphere —of young students in a college.

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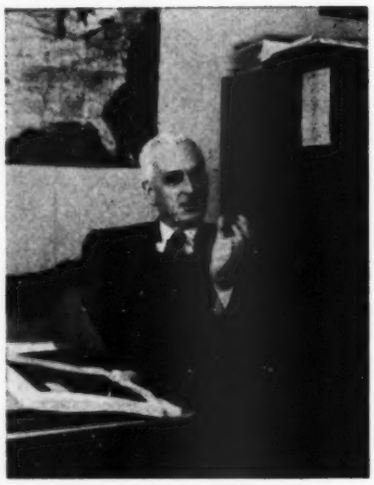

"We have found that the community college grows much faster after you get your own facilities."

MORRISON

That's going to make it grow. But we were also interested in the adults, and we have a big adult program.

Q. How large an area should you survey, in terms of setting up a community college?

NOVAK: Some time ago, we thought a radius of 15 to 30 miles was the most you could expect students to commute. But, as highways are improved and as cars become second nature, this radius is increasing.

MORRISON: We find that "so many miles" isn't as important as how long it takes to go there. You know, in an urban area it sometimes takes a half hour to go 15 miles because of traffic. As an outside limit I'd say it should take no more than one hour each way to go to a community college. That is, a community college which is a commuting institution.

Q *How much lead time should a school board give itself in the surveying stages of a community college?*

MORRISON: You don't ever have long enough. I think that if you can start four or five years before you're

What courses should a community college teach?

Unlike regular four-year institutions, which must concentrate entirely on academic programs, the junior college can slant its curriculum to suit its community. Here are three general curriculum categories that many community colleges offer.

ACADEMIC

The academic courses can be broken into two sections—one for those students who expect to transfer from the community college into the junior class of a regular four-year college or university, and one for those students who wish to continue their general education through the 14th grade, but who do not expect to go any farther.

To do an effective job for the potential transfer student, these courses must closely correspond, in content and caliber, with neighboring four-year institutions. "We work closely with George Washington University and the University of Maryland," says Novak, "to be sure that the credits our students earn here will be accepted when they leave. It defeats the whole purpose of your transfer program if, when a student enters a four-year college, part or all of his credits are disallowed."

Students who are not planning to transfer after they leave the junior college, often take the same courses, but are less restricted in their choices. For example, a potential business administration transfer must take certain courses which all but fill up his program. A student who does not expect to continue may take a number of business administration courses but still have room in his program to take other subjects that are totally unrelated.

The academic courses are the easiest and least expensive to set up and community colleges often offer only these subjects when they open.

VOCATIONAL-TECHNICAL

"To set up a truly useful series of vocational and technical courses, it is necessary to contact industrial leaders in the area from which you will draw your students," says Morrison. "This program takes very much longer to start—and it's easier to make mistakes."

The community college vocational program can be greatly aided by area industry and by state and federal departments of labor. "Even though people are very mobile at the present time," says Morrison, "your primary concern in a community college should be the community. So your courses should be designed to prepare students to work in local industry."

The college vocational program differs from the high school program in two important ways.

1. The program is offered on a higher level of understanding and, in most cases, is coupled with a requirement that the student take a certain number of college level academic courses.

2. The students are two years older and more experienced than those taking high school courses, and, when they graduate, they're much better prepared for employment.

ADULT EDUCATION

Adult education courses often precede the junior college and, in many communities, operate independently of the college when it is established. These courses should be set up around the indicated desires of the community. In most cases, through registration fees, they pay for themselves.

going to have a junior college, it's a whole lot wiser. But you never have that long. You want to get the junior college going. The survey part usually can be done in six months.

Q. In Prince George's County, this survey was done by a community group. Could it have been done as well, or better, by a professional organization?

NOVAK: I think there is an advantage in having a community group do the survey because they know the people in the area. You can always bring in consultants to give assistance.

MORRISON: Most of the real work of the survey can be accomplished by the community itself. Some consultants will probably be needed. But you'll find that there are sufficient individuals in most any community who are eager to help. The state colleges and universities have consultants who can be of great assistance.

Q Let's assume that a district has made this survey and found a lot of interest in a community college. How many potential students does the district need before it really gets down to the job of forming a community college? What is the minimum?

NOVAK: Charles County, which is just south of us, opened a junior college with 35 students the first year. All of these were freshmen. We started in the fall of 1958 with 185 students, which was the highest first-year enrollment of any junior college in Maryland.

Q. If a district's survey reveals 35 interested students, is this enough to go ahead? Or should it be looking for a larger number?

MORRISON: I think it's a whole lot wiser to look at what you're apt to have in the third year rather than what you'll have the first year. The first year is the year to get started, and you have to develop courses and you have to get your staff together and form them into a unit, and so on. If you have a community which has 1,000 to 1,200 students in the high school, you can be reasonably certain that, under ordinary conditions, you will have a potential of 300 students in your third year of operation.

Q. In looking at this potential, does the number of students presently going to four-year colleges have any effect? Some districts have 85 or 90% of their students going on to college now. Other districts have anywhere from 20 to 40% of their students going to college. Would one of these have a better potential for a community college than the other?

MORRISON: I'd say so. I think that one of the main objectives of a junior college—certainly it isn't the only one—is to serve the students who otherwise wouldn't get to college at all. There is a county in Florida that had 7% of the high school graduates going on to a four-year college. Twelve years after the junior college was begun, 45% of the high school graduates were going to the junior college and the same 70% were still going out. But even when a district is sending 50 or 60% of its students on to college, a junior college may be needed.

"One of the problems we have found in operating in a high school is that it's difficult for students to accept this as their college."

NOVAK

Q Suppose the board of education has decided that there is a need for a community college and that there will be enough students. Can the district go ahead and establish a junior college without a separate building or must it start construction immediately?

NOVAK: I think a great number of junior colleges in the country today are started on a late afternoon and evening basis in one of the high schools of the district. Ours is an example. We run classes from 4 p.m. until 10. I think every junior college in Maryland was started this way.

MORRISON: We have found, however, that the community college grows very much faster after you get your own facilities. And there's always the danger that your "temporary" home will become very permanent. You only have to look around in this city of Washington and you will see many, many examples of temporary buildings that have been temporary for the last two or three generations.

NOVAK: There are some problems, too, in the late afternoon and evening program. You find that some of the parents are a little concerned about sending their daughters, especially if they don't get out until 10 p.m. Other problems also arise.

Q. If a district has a vacant elementary school or some empty classrooms in the high school, is that sufficient for permanent quarters?

NOVAK: No, not for permanent quarters, but it's good enough for a start. One of the problems we have found in operating in a high school is that it's very difficult for the students to accept this as their college.

MORRISON: If you do use borrowed quarters, if at all possible get a separate wing, or a separate floor—something that identifies your space as the junior college, so you don't move into a guidance office that hasn't quite been vacated, or a lab that a high school teacher uses to do set-ups. If at all possible, get some identification.

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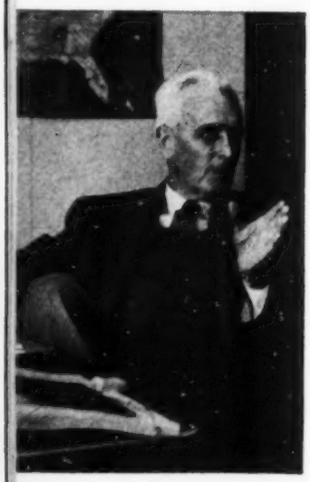
"The community college must have its own administrator —whether you call him dean or president."

MORRISON



"...and he ought to be hired at least a year before the college officially opens its doors."

NOVAK

Q Who should run a community college? Can this job be handled by the high school principal or superintendent, or does the district need a special man?

MORRISON: The community college is very different from the high school. It has special problems. If it is assigned to the high school principal as a major responsibility, he has so many areas of responsibility that he won't be able to give the time which it requires. Also, he's apt to use the same approach that he uses in the high school, which isn't adequate. Our feeling is that you *must* have an administrator—whether you call him dean or president—who has a measure of responsibility for his own area. This position will have to be included in the administrative structure of the district. As an ideal situation, in a unified district, the head of the junior college becomes the assistant superintendent in the school district.

Q. Where should a district go to get a dean for its community college? Should it look for an assistant superintendent? A college professor? A college president?

MORRISON: I think you ought to look first of all for someone who has had teaching experience on the college level. He *may* have had secondary and elementary experience but he *must* have some familiarity with the college situation. I would say this is number one.

Q. Where might the board look for this man?

MORRISON: I think there are a great many different places to go. I have seen a situation where a man who was head of a music department in a college went into a junior community college situation and did an excellent job. He had had the responsibility for developing programs and working with the other members of the staff and the community in evaluating community needs. I think you can sometimes over-emphasize the academic side. A candidate should have the breadth so that he could call together a community group and talk to them and find out what they feel the needs are in the whole area. I think this is very important.

Q. What should a district expect to pay a community college dean?

NOVAK: Some counties in Maryland pay on the same pay scale as the principals. In my situation, I am paid as an assistant superintendent.

MORRISON: I would say that if you set him at the level of an assistant superintendent in the district that this would be just about right. Of course, you have some situations where your assistant superintendent is very poorly paid. I wouldn't go along with this. If you're going to pay a very small salary, the kind of individual you attract with that salary isn't likely the individual that you want. He isn't qualified.

Q. When should this college president or dean be hired?

NOVAK: I think the chief administrative officer ought to be hired at least a year before the college officially opens its doors. In my case, I came on duty June 20th and I opened September 10th. This is not long enough to do the best job.

MORRISON: I was going to say hire him three years before the opening, not one year.

NOVAK: At a minimum, I would say one year. He has a lot to do. He's got to write the catalog, he's got to make out all the forms, he's got to plan registration, he's got to hire a staff. He's got to make many speeches to acquaint the community with the new college. Above all, he has to acquaint the high school faculty and the principal with what's going on and get their cooperation. This is a tremendous job. You can't do it in a month.

Q It is now March, 1961. How soon could a district expect to put a community college into operation? Could one be opened in September of 1961?

MORRISON: I wouldn't want to see it.

NOVAK: I think September of 1962 is much more reasonable. You need

continued on page 112

In many states and cities, schools are compelled to tell parents their children's scores on standardized tests. In this article, an expert shows how he would present such information to a parent.

How to explain Standardized Test Scores to your parents

By Dr. ROBERT L. EBEL, *Vice President*
Educational Testing Service
Princeton, N.J.

■ ■ ■ A recent ruling in New York State requires school districts to tell inquiring parents their children's scores on such standard tests as those that measure IQ's.

In community after community across the nation, schoolmen have been faced with irate parents demanding to know how Johnny rates, where he stands and why he's not doing better.

Moreover, in many communities the schools have voluntarily taken on the job of providing information other than straight grades for academic subjects on their report cards.

Test scores are no great mystery. Teachers have been testing students for years on what they know in a specific subject. Intelligence tests, aptitude tests and the like, simply measure students on what they know or can do in a variety of subjects—and then place their grade (their raw score) on a scale that shows where they stand when compared to students all over the nation, or in the community, or in some selected group.

Tests scores are, however, open to misunderstanding and misinterpretation. Unfortunately, many teachers and administrators understand them only partially. Even test "experts" can misinterpret a test result. Certainly a parent who is told simply that her child has an IQ of 115, and who has no further information on what that score means, is being given information she may not know how to use.

If that same parent believes that her boy is bright, and if she finds out that her neighbor's child has received an IQ score of 125, and her sister's child an IQ of 130, she may feel that the school is doing a bad job, or is even lying to her.

One principal in a midwestern school ran into trouble with the parents of a 10-year-old who had an IQ of 110. A neighbor's daughter, who was only eight, had a measured IQ of better than 130.

"What do you mean," the irate parents

demanded. "Our son is smarter than that eight-year-old. He's a better speller. He can do long division and fractions and she can't. But she got a higher score than he did. If she's so smart; why isn't she in the fifth grade, too?"

The simple fact of the matter is that most of the trouble connected with the revelation of a child's score is the fault of school authorities who fail to prepare parents for test results.

This can be true on any test. If Johnny comes home from school with a grade of 30 on an arithmetic test, his parents will be quite disappointed—until he tells them that nobody in the class got a higher grade. In this case, the student is in a position to explain matters and to make his parents understand what is happening. In the case of the IQ, that explanation is the job of the school.

Because of the problems confronting teachers and other schoolmen who attempt to explain test scores to laymen, the editors of SCHOOL MANAGEMENT asked Dr. Robert Ebel, vice president of Educational Testing Service, to tell how he would go about explaining a test score to a parent. In the following article, he covers some of the major points.

■ ■ If a test score is approached on a common sense basis, it is seldom difficult to interpret. Problems arise, primarily, because of the different numerical systems used and, secondarily, because of the different kinds of interpretations we wish to make. The secrecy, complexity and mysticism with which psychologists and counselors have sometimes surrounded test scores has been generally unnecessary and harmful in their consequences.

Recently, the New York State Department of Education required release of test scores to parents. This probably will not make life any easier for counselors and other school personnel, but, if properly carried out, it should prove to be educationally beneficial. We should be most skeptical of any policy of with-holding information about a person from him, or from his parents, on the ground that the information may be misused. If explained properly, release of it will almost certainly do far more good than harm.

One of the most frequent questions asked by those who see a test score is, "What does it mean?" Unfortunately, no simple and generally applicable answer can be given to this question. But the question is important because the effective use of tests depends on proper interpretations of test scores. It can be answered in terms most people can understand.

An educational test score is a number intended to indicate how much knowledge or ability an individual has shown on a particular test. What it means depends on how it was obtained and what other present or future information about the person it is related to. This can be explained to anyone.

The numbers used in reporting test scores constitute a scale. Years ago, test grades and school marks were usually reported on a scale in which zero presumably indicated absolute ignorance, 100 indicated perfect knowledge, and 75 was regarded as the minimum passing score. Many teachers still use percent grades on their classroom tests. Students and parents seldom complain that they don't know what such grades mean, but they sometimes find it hard to see why a particular grade was given. The teachers who assigned the grade sometimes have trouble explaining convincingly just why that number, and not some higher one, was given.

In the 1920's, a series of studies of the grades given by different teachers to the same answer showed that the grades were quite variable, or unreliable. This led to increasing use of objective tests and to gradual abandonment of the percent scale of test grades in favor of letter grades.

Raw scores

The number of questions a student answers correctly on an objective test is called a raw score.

What a raw score means depends on the number of questions in the test and how difficult each question is. On a well constructed test, appropriate for the individuals tested, the raw scores should range all the way from perfect or near perfect scores down to scores near the number one would expect to get by blind guessing. The average score should be about midway between the maximum possible score and the expected chance score. (On a test composed of 100 four-choice questions, the expected chance score is 25.)

Raw scores are usually reported on classroom tests. To those who have taken the test, who know how many questions it contained and how hard they were, the raw scores have considerable meaning. If a distribution of the raw scores for all students is also reported, as it usually should be, the raw score is given added meaning. One can then tell whether the person's score was relatively high, near average or relatively low for a group of generally similar students.

In other words, if there are 100 questions on a test and a student receives a grade of 80, he knows he answered 80 correctly. If he knows that the highest score in the class was 82, and the average 50, he can feel he has done quite well. If a large number of students received a grade of 100, and the average was 90, the student receiving an 80 knows his grade is quite low for his class.

Two methods are commonly used to report the level of an individual's

test score in relation to the scores of a group of presumably comparable individuals. One is to convert the individual's raw score to a percentile rank. A percentile rank for a raw score on a test indicates what percent of the group made lower scores. Percentile ranks are sometimes confused with percent scores. A score of 80% should mean that the student answered 80% of the questions correctly, or did 80% of what an ideal student would do. But a percentile rank of 80 means that he answered more questions correctly, or did better than 80% of the students in the group with which he is being compared.

Standard scale

Another method of reporting the relative level of an individual's score on a test is to convert it to a score on a standard scale having a specified mean and range for the reference group. College Board scores represent this type. The mean College Board scores for the reference group is intended to be 500, and the scores ideally range from a low of 200 to a high of 800. Theoretically, about two-thirds of the scores are expected to be between 400 and 600. Fewer than 25 out of 1,000 are expected to be higher than 700 or lower than 300.

Other tests use similar standard scales having different numerical values. The Iowa Tests of Educational Development use standard scores which range from 0 to 30 with a mean of 15. Some tests used in the armed services report scores on the Stanine scale, which ranges from one to nine with a mean of five.

Intelligence Quotient

A special type of standard score, the IQ or Intelligence Quotient, is used for reporting the results of certain intelligence tests. As originally conceived, it was calculated by dividing the child's age in years into his mental age, and multiplying the result by 100. An average 11-year-old child has a mental age of 11 years. Thus, for the general population, IQ's have a mean of 100. Theoretically they could range from zero to infinity. In practice, IQ's of less than 50 or more than 150 are quite rare.

The major problems in interpreting IQ's are not mathematical. They have to do with uncertainty concerning what it is that is being measured. Few concepts in education have been so widely accepted on the basis of so little real understanding as the concept of intelligence. Even experts in mental testing disagree on what intelligence is. The tests they build to measure intelligence reflect their different opinions of what it is. As a result, their various tests yield IQ's that differ. Most of the experts no longer believe that intelligence is a single quality which determines a person's effectiveness in all kinds of mental activity. Some experts in mental testing are beginning to question the usefulness of the concept of general intelligence itself. They prefer to say, not that a person *has* an IQ of 115, but that his IQ score on a certain test *was* 115.

Some test specialists have sought an easy road to evaluation by relating *achievement* test scores to *aptitude* test scores. If a student's *ability* (aptitude) test score is higher relative to his peers than his achievement test score, we say he is "not working up to capacity" or is "under-achieving." Where the reverse is true, we say he is an "over-achiever" though how one can ex-

WHEN EXPLAINING A TEST SCORE . . .

KEEP THESE IN MIND

1. *The meaning of a mental test score for a person is not occult, but can be defined on a common sense basis in terms of the operations performed to secure the score and in terms of the relation of the score to other information about the person.*

2. *A person's test performance is related to the performance of his peers by using percentile ranks or some type of standard score on a defined scale like the College Board scale.*

3. *It is more reasonable to regard IQ's as indications of general mental development than to regard them as measures of innate mental capacity.*

4. *Mental tests do not yield highly precise measurements. Repeated measurements of the same trait in the same person will yield varying results.*

5. *No set of tests can measure accurately all important aspects of human ability.*

6. *It is very difficult to predict future human behavior and achievements accurately.*

7. *Test scores should be regarded as measurements rather than as evaluations.*

8. *Achievement test scores should not be interpreted solely or even mainly on the basis of how they compare with aptitude test scores.*

ceed his potential for achievement is not quite clear. Perhaps, instead, the aptitude test should be blamed for under prediction.

Some test publishers encourage teachers and guidance workers to prepare expectancy charts. Instead of reporting what experience has taught us *will* happen to those having different levels of test scores, these expectancy charts are supposed to indicate what *ought* to happen. But it does not seem reasonable to believe that everyone who has the same IQ *ought* to make the same score on a reading test, an arithmetic test or a science test. If it were, should we not also say that everyone who has a given chronological age *ought* to have the same mental age?

Errors of measurement will account for much of the apparent over and under achievement. Differences in the tasks in the aptitude tests and the achievement tests will account for most of the rest of it. Actually, achievement exactly at "capacity" would be more surprising than over or under achievement, in view of the specificity of human abilities and errors of measurement.

Special attention to the individual problems of extreme under-achievers has no doubt been very helpful in some cases, but whether this should be attributed more to previous under achievement or to subsequent special attention is an open question. Test specialists are coming to regard the concepts of over and under achievement with great skepticism.

What kind of score?

Returning to the interpretation of test scores in general, it is clear that the first step is to find out what kind of a score one is dealing with. The best way to discover the meaning of a raw score is to learn something about the test itself. The best way to discover the meaning of a percentile rank is to learn something about the group used to define the percentile equivalents of the raw scores. A pupil's score on a test may place him at the 30th percentile in his classroom, but in the 70th percentile in reference to all the pupils in his state. In addition, one must find out the mean and range of the standard score scale being used. But it should be apparent that the general meaning of a test score, as determined by the operations involved in obtaining it, is not so complex or obscure as to be the exclusive property of one who has an advanced degree.

The second aspect of the meaning of a test score, namely what other measures it is related to, can be treated simply or elegantly. In the hands of some advanced statistical analysts it can become so complex and abstruse that only a few of their fellow statisticians can understand what it means. But the problem can be approached more simply. One way is to produce expectancy tables that give indications of probable future achievement. For example, one large university with an almost unrestricted admission policy reported that of every 10 students who receive a BA degree after four years, four had scored in the top quarter on their entrance tests, three in the second quarter, two in the third quarter and one in the bottom quarter. Such data is obviously useful in admission counseling.

No test score is as precise as the numbers with which it is reported. Almost without exception it should be regarded as an approximation. If student A gets a raw score of 80 on one form of a test, he is almost certain to get a different score, higher or lower, on an equivalent form of the test. If student B gets a score of 78 on the same test, it is not at all certain that he really knows less than A in the field the test covered.

Probable error

Test specialists calculate something they call a probable error to indicate the accuracy of the scores yielded by a test. If the probable error of scores on a certain test is three raw score units, this means that the scores of half the students tested are within three units of their true scores. Scores for the other half are off by more than three units.

Probable errors do not reflect mistakes in scoring. They do reflect the sampling errors associated with the choice of one set of questions rather than another. Mary may be able to spell 860 of the 1020 words in the spelling book used in her grade. Johnny may be able to spell only 780. But it's quite possible that in a test based on only 100 words from that spelling book, Johnny may get 75 correct and Mary only 73.

Probable errors may also reflect fluctuations in the performance of the person being examined. A student who is not feeling well on the day of a test may not do as well as he would on another day. The probable error of a Binet IQ is 3 IQ units. The probable error of College Board scaled scores is about 20 score units. The probable error of a percentile rank between 30 and 70 is about six to eight percentile units on a good test. Below and above this middle range it grows progressively less.

Unusual conditions

Another limitation of test scores is that they reflect performance on a special kind of task under rather unusual conditions. Not all of what a person is or can do is revealed by test scores, even when a wide variety of such tests is given. Few if any test scores are adequate to indicate, apart from other evidence, what vocational choice a person should make, what college he should enter, or whether he will succeed if he chooses a particular vocation or college. Over and over, test specialists have reminded the users of test scores that many other kinds of information need to be considered in reaching vocational and educational decisions.

No one knows enough about how the behavior of individuals is determined, or how the forces influencing behavior will change with the changing times, to expect high accuracy in predictions of the future behavior of anyone. As one successful man said modestly, "Success depends not only on how you handle life but also, and often decisively, on how life handles you."

Finally, one should never forget that a test score is a measurement, not an evaluation. It reports with modest accuracy what *is*. It says nothing about what should be. A test score which is quite good for one student may be unsatisfactory in view of the past experiences or future plans of another. Evaluations and, more importantly, decisions on future action must sometimes be made with the help of test scores, but it is quite wrong to expect any test to make such evaluations or decisions automatically. The most we can expect is that test scores will *contribute* to sounder evaluations and decisions. **End**

SUPERIOR

EXCELLENT

How GOOD are your schools?

AVERAGE

FAIR

POOR

There are two ways to evaluate your schools: do it yourself, or employ an outside appraisal team. In Glen Rock, N. J., schoolmen did *both* to get the answers they wanted. Here's how, and why.

■ ■ ■ Why should you evaluate your schools?

One obvious reason is to answer your own lingering doubts about their standing; another is to inform your taxpayers about the quality of the education you offer.

Finally, and most important, evaluation will help you uncover and correct the faults in your school system.

To get the full story on why, and how, a district evaluates its schools, SCHOOL MANAGEMENT editors visited Glen Rock, N.J., a suburban community of 13,000 residents who demand—and get—a quality education for their younger citizens.

Responding to this demand, Glen Rock schoolmen completed not one self-evaluation, but three, as well as three outside appraisals, in a four-year period.

"We did the evaluations because this was the only way we could assure our community that we do have a good school system," says Superintendent Eugene J. Bradford. "The outside appraisals were not only reassuring, they provided us with some good, solid, objective criticism."

Glen Rock evaluated its junior high school, then its high school, and at the time of this interview had just completed appraising its four elementary schools. How, and why, they did this job is explained in these excerpts from a tape-recorded interview with Superintendent Bradford; George Hoagland, president of the school board; Robert Ax, principal of Glen Rock High School; Paul Schneider, principal of Glen Rock Junior High; and Clifford Kreismer, principal of Clara Coleman Elementary School.

Q. Gentlemen, you have just completed your third self-evaluation of the Glen Rock public schools. Why did you evaluate your district?

BRADFORD: This community is one that demands good education, and our job, as educators, is to make sure it gets it. By self-evaluating our schools, by covering every aspect of our educational system, we were able to find our weaknesses, and then to correct them to produce stronger schools. In effect, we felt it was important to "know thyself."

HOAGLAND: You have to evaluate yourself before you can be formally evaluated and accredited by a regional association of secondary schools and colleges. In addition, state approval is contingent, to some degree, on a self-evaluation. Only when your district wins the approval of state and regional authorities can you expect to place your students in good colleges.

SCHNEIDER: There are other reasons, too. Self-evaluation is as much an integral part of planning—curriculum, plant, or otherwise—as any other step. It's imperative that you do evaluate achievement after you've followed through on the

BRADFORD

"The real job of an evaluation committee is to interpret facts and findings about the schools and the school system."

KREISMER

"When we ask a visiting team of evaluators to look at the schools, we are assured of some objective criticism."

SCHNEIDER

"It's imperative that you evaluate achievement. This provides a foundation for future planning."

plans. This gives you a foundation for future planning.

Q. What did you appraise? What aspects of the school system did you cover?

BRADFORD: We covered everything which could be related to the education of the children: every subject which was taught; every service, such as guidance and library; the board of education and its philosophy; the administrative organization; the faculty. We formed evaluating committees which went right into the classrooms and observed. Later, outside visiting committees interviewed teachers, pupils, parents and laymen. They found out what the community thought of our schools and why. They examined in-service training programs for teachers, studied pupil recreation areas, sat in on board meetings. I'm sure those committees didn't neglect a thing.

Q. What self-evaluating committees did you have?

HOAGLAND: There were two types, both organized under a steering committee (*see box page 67*). These were called "major section committees," which evaluated general aspects of the school system, such as guidance services, and "subject area committees." Each of the latter evaluated a single curricular area.

SCHNEIDER: Membership on a major section committee included representatives of the steering committee, a principal of the school which was involved, teachers in that school, the superintendent and other persons who had a direct concern—the guidance director, for example. There were about eight persons on this type of committee.

Membership on a subject area committee was normally composed of teachers familiar with the subject being evaluated, but we found it desirable in some cases to have teachers serve on committees other than ones in their major field of interest. We did this to promote some objective criticism. Each subject area committee had about three members.

Q. What was the steering committee?

BRADFORD: Representative teachers, a former school board member, a PTA representative, faculty department heads, and the superintendent and other persons on his staff formed the steering committee. There were about 20 persons in all.

Q. Let's get back to the committees which did the evaluating. What criteria did they use?

SCHNEIDER: They used two basic measures: 1) a judgment against common standards which are good educational practice everywhere. We obtained these from the Middle States Association of Secondary Schools and Colleges. The same basic standards are used all over the country by other regional accreditation agencies. 2) a judgment against standards of our local school board. These standards are based on our own philosophies.

HOAGLAND: The national standards are expressed in general terms; here we dealt in specifics. For example, the Middle States philosophy promotes sequential development in foreign languages. We took this one step further. Our board's philosophy is that there must be sequential development in *four* languages for *six* years. Our self-evaluating committee went into the classrooms to see if the languages were being sequentially developed for the entire six-year period.

AX: Here's another example. Our philosophy is to require a theme a week from high school students in English composition. The committee evaluating our high school counted themes, to make sure there were 36 from each student.

Q. But this was strictly quantitative. On a self-evaluation, how can you determine the quality of themes?

KREISMER: The evaluator picked themes at random and questioned them—How good were they? How well were they reviewed by the teacher? Were students correcting the themes and re-submitting them to the teacher?

AX: Every evaluator was provided with a guide on which he kept a record. Whether writing skills, for example, met criteria to a high degree, above average, average, below average, or not at all. This was qualitative.

Q. When did you start your self-evaluation?

SCHNEIDER: We started in 1956 with our junior high school, and the format we followed with this appraisal was basically the same for the high school and elementary evaluations. Our first step was to get a good declaration of our educational objectives. Our philosophy, on which we based these objectives, was already in existence, prepared three or four years before by the school board, public and staff.

Next, we formed the steering committee to make the administrative arrangements, such as picking other committees, setting dates, etc.

AX: Under the steering committee, which organized the entire self-evaluation, we formed two temporary committees to gather background information on the community. This gave us a point of reference for the evaluation, and was an aid later when we were evaluated by an outside visiting committee.

Q. What sort of "background information on the community?"

AX: "The committees made reports on the cultural climate of the town, the general income level of parents, pupil population, civic activity, etc.

SCHNEIDER: After getting this information, the steering committee organized the major section and subject area committees. This was when the actual evaluation began.

Q. Can you take a single subject area and tell us how your self-evaluation committee worked?

SCHNEIDER: Certainly. Take the area of mathematics. The committee members were provided with checklists of criteria questioning the organization of the math department, the nature and diversity of courses available, physical facilities, etc. They checked to see if remedial instruction was available, if competent pupils were encouraged to take advanced courses, if students were taught practical applications of geometric principles. There were hundreds of questions like these to be asked. Then the answers had to be evaluated.

Q. What was the next step in the evaluative process?

SCHNEIDER: We rated ourselves on each specific item in each category.

continued on next page

GETTING ORGANIZED

Here's how Glen Rock schoolmen organized each of their three self-evaluation studies:

SET UP STEERING COMMITTEE

Total about 20 persons

Teachers (all levels), former school board member, former PTA president, administration representatives, faculty department heads, superintendent and staff trainees

Duties

1. Help organize self-evaluation committees
2. Schedule meetings
3. Send delegates to committee meetings
4. Summarize results of meetings
5. Compile recommendations and commendations
6. Publish results
7. Report to superintendent and school board

SET UP MAJOR SECTION COMMITTEES

About eight persons each

Steering committee member, principal of school which was involved, teachers, superintendent, persons concerned (chief custodian, guidance director)

Areas of responsibility

1. District organization
2. Guidance
3. Administration and supervision
4. School personnel
5. Home, school and community relations
6. Plant and buildings
7. Instructional equipment
8. Library services

Function (evaluate)

1. Personal interviews
2. Criteria questionnaires
3. Inventory
4. Inspection tours

Submit reports and recommendations to steering committee

SET UP SUBJECT-AREA COMMITTEES

About three persons each

Faculty members, each belonging to two or more committees

Areas of responsibility

1. Kindergarten (if elementary school)
2. Handwriting (if elementary school) and spelling
3. English, reading and composition (language arts, if elementary school)
4. Music and art
5. Social studies (history)
6. Languages
7. Health, safety, physical education
8. Mathematics
9. Vocational education
10. Business education

Function (evaluate)

Same as major section committees

Submit reports and recommendations to steering committee

HOAGLAND

"The school board didn't judge the self-evaluation critically, because we don't consider ourselves educational experts."

AX

"The first step in evaluating your schools is to evaluate your evaluators. You must have a competent team of judges."

KREISMER: This wasn't all sweetness and light. There was a lot of disagreement as to what extent we were meeting the criteria. This occurred among faculty members of the committees. Eventually, their judgments were resolved.

SCHNEIDER: Every subject area and major section was evaluated in this manner, and recommendations for changes and improvements were made. Then, each sub-committee chairman presented his group's appraisal to the superintendent and the board chairman.

Q. Earlier you mentioned an "outside visiting committee." What kind of committee was this and why did you invite it in?

KREISMER: In Glen Rock, if you went house-to-house and asked the community what it thought about our education, the comments would be highly favorable. Those opinions, however, would be based on what we, the school administrators, have told the citizens. When we ask a visiting evaluation team to look at our schools, we assure the community of some objective, constructive criticism.

BRADFORD: In the cases of the junior and senior high schools, we had to have an outside evaluation to accredit them. This wasn't necessary for the elementary schools.

Q. Who was on your outside evaluation team?

HOAGLAND: Representatives of state and regional accrediting agencies.

KREISMER: For the elementary school evaluation, since there was no accrediting agency for this level, we asked two persons prominent in state educational circles to form an evaluation team, visit our schools, and appraise them. Those two persons were Dr. Thomas E. Robinson, President of Glassboro State College, and Dr. Bertha Lawrence, Dean of Instruction at Trenton State College. There are no national standards for the elementary level; we worked out our own with the New Jersey School Development Council.

HOAGLAND: The visiting committee's evaluation procedures were, for the most part, similar to the procedures we used ourselves. In fact, they even used our self-evaluation report as a starting point for the elementary evaluation.

Q. What recommendations did the visiting committees make?

BRADFORD: In general, their recommendations did not differ greatly

ELEMENTARY SCHOOL EVALUATION HIGHLIGHTS

The visiting committee which appraised Glen Rock's elementary education did not do so for accreditation purposes. It evaluated at the request of schoolmen who wanted some objective criticism. Here are excerpts from that committee's formal report:

SCIENCE

Commendations: The school system provides a science-teaching workshop taught by experts for faculty members interested in self-improvement. A science consultant helps teachers who are ill at ease in this area.

Recommendations: More basic materials and equipment to be provided either in the classroom or in a central storage area. A list of all science references in the schools to be made available to all teachers.

HEALTH AND SAFETY

Commendations: Schools follow up in cases where health corrections have been recommended to parents. Good health and safety rules prevail. Parents attend physical examinations of children.

Recommendations: A study to determine if dental examinations should be instituted.

LANGUAGE ARTS

Commendations: An expert in reading and a speech therapist are provided to meet difficulties in basic

from those of our self-evaluation committees. There were a few occasions, however, when their opinions differed rather sharply.

AX: That's right. For example, our self-evaluation committees for the junior and senior high schools felt that we had a wonderful extracurricular and club program for students. In both cases, the visiting committees did not agree, and recommended that we arrange more pupil activity in the way of formal clubs. We didn't follow the recommendations because, although we felt that clubs were important, we knew the academic work was vital. We felt the students had ample time during after school hours to pursue their individual interests. The labs, classrooms and shops were all open for them.

Q. Did the self-evaluation teams or the visiting teams give any tests to students during the evaluations?

BRADFORD: They interviewed students, but didn't give any tests. Our usual test results are on file, and these were made available. The student interviews were merely to determine the children's academic goals, what percentage intended going on to college, higher vocational studies, etc.

HOAGLAND: Our Glen Rock schools are highly academic in orientation. We think we are training the children well for college, and we have to prove this to an evaluation committee. When a committee asks, "How do you know you are training your students well?," our answer is that we get about 91% of our graduates into a variety of colleges.

Q. To what extent did the school board participate during the course of the evaluations?

HOAGLAND: Our board members are not professional educators—we're laymen. We asked laymen's questions, questions which had not occurred to the educators. We were able to do this because of the open lines of communication which exist between the board and the administration and faculty. This was a point on which the visiting committee commended us.

Q. After a district completes a self-evaluation, and after a visiting committee has made its formal report, what remains to be done?

BRADFORD: Following through on the recommendations. If a district doesn't do anything about the suggested improvements, or if something is done and the community is not informed, you have neglected to take advantage of the evaluation.

SCHNEIDER: I'll give you an example. Our junior high report recommended that we make changes in the math curriculum to satisfy the differences in pupil abilities. This was our first attempt to take care of our better math students. As a result, we now have two sections of advanced classes. For the slower students, we teach an algebra course six times a week. Pupils cover the same material over a semester, but they take it at a slower pace.

BRADFORD: We publicized the visiting committee's formal report—with emphasis on the objectivity of its judgment. With each of the recommendations, we had our proposals for change, and when the change was made, our public heard about it.

The reason was simple enough—our taxpayers have every right to know what's going on in their schools, and we, the educators, have the responsibility of telling them. So we had public meetings, ran articles in our board quarterly and local papers, and put copies of the evaluation on file in the public libraries. The community was fully informed.

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skills. There is an effective plan for teaching phonics. The independent work for non-reciting groups is well planned and purposeful. Teachers prepare carefully for lessons. A helpful relationship exists between Glen Rock schools and the local library.

Recommendations: Pupils should read for communication as well as for reading skills. Emphasis should be on oral expression for idea communication. A teaching guide to show developmental steps in reading by levels of attainment.

PHYSICAL EDUCATION

Commendations: The use of tanbark and rubber matting under outdoor jungle gyms is an excellent safety measure. A physical education supervisor is available to teach new skills and assist teachers. There is good cooperation between schools and the PTA in a creative program of after school activities.

Recommendations: Larger play areas to include sports, and to meet the minimum state requirements.

GUIDANCE

Commendations: The interpretation of test findings are quickly translated into action by guidance personnel. Parent conferences are regularly scheduled. Primary children having difficulty are retained until they develop the requisite ability. The informal guidance throughout the entire school system has led to excellent pupil behavior.

Recommendations: More anecdotal records in pupil files. In many cases the folders contain only test results and health records.

SCHOOL PERSONNEL

Commendations: The staff is well prepared; 40% of the teaching staff has masters degrees. There is excellent rapport between teachers, staff, pupils and community.

Recommendations: Self-improvement should be encouraged by instituting workshops.

How to keep your science

Demands for improved science teaching make many high school science laboratories obsolete almost before they open. Here's why schoolmen in St. Charles, Ill., think their new laboratories will never become outmoded.

■ ■ ■ When a high school textbook gets out of date, you simply replace it with a new one. At the most, your costs may run to a few hundred dollars. An obsolete science laboratory, though, is another —and far more expensive—story.

A typical high school science lab costs about $50,000, fully equipped. In a new school, laboratories can account for as much as 6% of your total building costs.

There isn't much you can do about lowering these figures. If anything, they will continue to climb, as new science programs call for greater student participation in lab work —increasing the need for more and better laboratories.

How can a school plan these expensive facilities so that they will not become obsolete before their time? What should be included in laboratories designed to train students for the space age? How can provision be made for science teaching methods that are not yet even in use?

One solution

School officials in St. Charles, Ill., think they have come up with satisfactory answers to these questions. Key to their thinking: flexibility.

Says Robert W. Schaerer, assistant superintendent in charge of business affairs, "We planned our labs for a co-ordinated, comprehensive science program. They include facilities for physics, chemistry, electronics, photography, radioisotope research and storage, and a science library. All of the multi-purpose labs in the science wing we recently added to our high school building are designed to accommodate almost any kind of teaching. Our addition does not include biology labs which are located in the main building. The new wing contains only labs for the study of the physical sciences."

The science wing is a two-story structure, 40 feet wide by 70 feet long. Each floor is divided into a 1,200-square-foot lecture area and a 900-square-foot laboratory (*see floor plans, pages 72 and 73*). In addition, there are smaller labs each containing 300 square feet devoted to special projects. These are meant specifically to accommodate gifted or especially interested science students pursuing their own individual researches.

The rest of the wing is divided—on each level—among three separate rooms, each about 100 square feet. On the chemistry level these rooms include a special radioisotope research space, a preparation and storage room where the teacher keeps, dilutes and distributes concentrated chemicals, and a library. On the physics level, the three areas

labs up-to-date

include a work area for students with special interests, a preparation and storage room where costly, special equipment is stored for distribution, and a small electronics lab. In addition, there is a photographic darkroom between the lab and stairway on each level.

Each lecture area is designed to accommodate 35 pupils (*see photo, at right*). Twenty-four more can work in the lab section at the same time, while 12 to 24 additional students use the special project areas. In other words, each level of the science wing can serve more than 80 students at a time. In addition, still other youngsters can use the roof-top laboratory facilities (*see photo, page 73*) for the study of astronomy and meteorology.

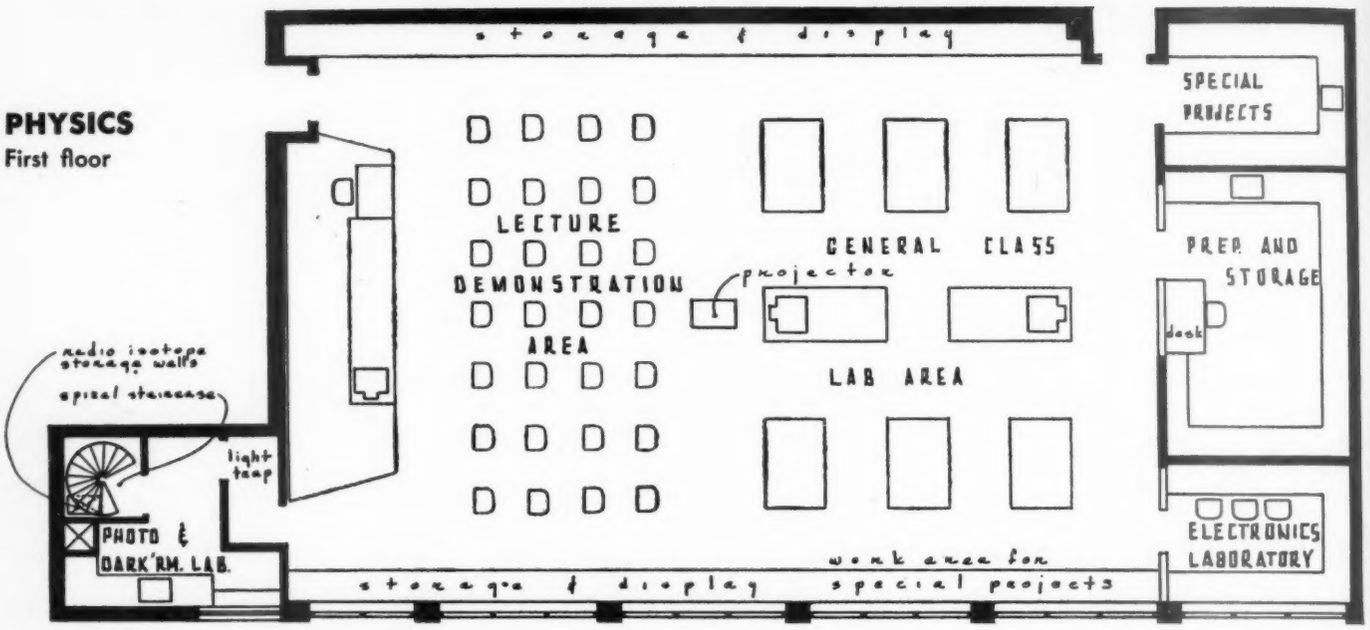
"Our science wing," says Schaerer, "was built to serve our educational program, not the other way around. We had our science needs and objectives all worked out before the architect put pencil to paper. As a result, we won't have to rebuild—or even remodel—our science labs until well after 1980." The planners tried to include every conceivable kind of facility that would save time, ease the teaching burden and help greater numbers of students learn science more effectively.

Total cost of the wing—including equipment—came to $170,000. But local officials feel that it was money well spent. Students benefit today from the expanded science program the school can now offer. The district will benefit in the long run, because the labs will not need expensive alterations and additions.

Outlined on the following pages are some of the noteworthy planning features included in the finished science wing. They demonstrate why St. Charles officials have expressed such confidence in the long-term adequacy of their high school's science labs. *turn page*

Chemistry lab consists of lecture area accommodating 35 students (foreground), the laboratory proper where 24 more students can work at one time, and several special projects areas where a dozen pupils can pursue research on their own.

Physics lab, viewed here from students' work stations, is similar in layout to the chemistry lab. Instructor can lecture from raised platform containing both desk space and demonstration table while supervising all other activity in rest of lab.



Physics laboratory

One entire wall is lined with cabinets containing adjustable shelves for the storage of lab materials. In addition, display cabinets are provided for student projects as well as for the safekeeping of special delicate equipment. Lab tables contain inserts for removable metal uprights and cross bars, permitting students to work experiments on any of a table's four sides. The bars are stored under the lab tables on specially designed hangers when not in use. The tables themselves are unique in that their surfaces are totally free of obstructions. All gas and air jets are located beneath table overhangs, leaving surfaces clear for experiments. Cleaning up is done, at special stone-topped dispensing tables with sinks, in the center of the lab.

Set into the ceiling throughout the physics lab are a series of hooks (*see middle photo, page 73*). Designed for convenience in setting up experiments involving pulleys, weights and the like, the hooks actually save much valuable teaching time. Students simply loop rope or wire over the hooks to set up an experiment, instead of wasting time erecting upright structures from which to hang experimental materials.

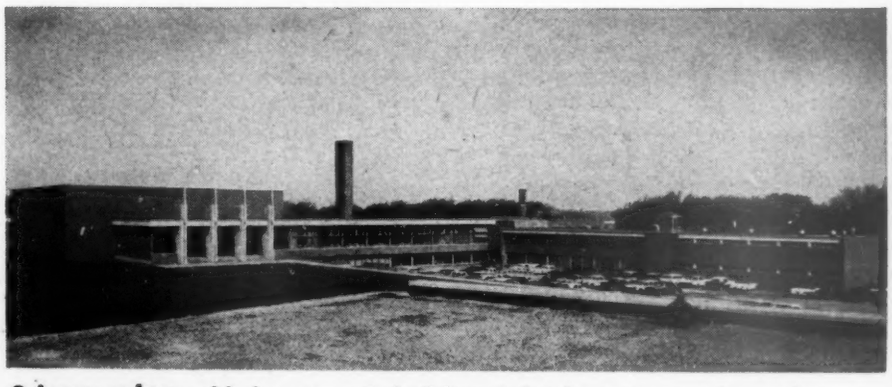
Special project areas (*see floor plan*) contain work spaces and cabinets—with locks—for the use of students conducting independent research over long periods of time. They can work on their projects during lab periods or in their free time, then lock their materials away where they will be undisturbed until they can come back to them again.

A prep-storage room is an off-limits area where the teacher can set up experiments and demonstrations, days—or even weeks—in advance. The teacher's desk, set behind a large picture window, affords him visual control of the entire lab and lecture area while leaving students with a feeling of independence.

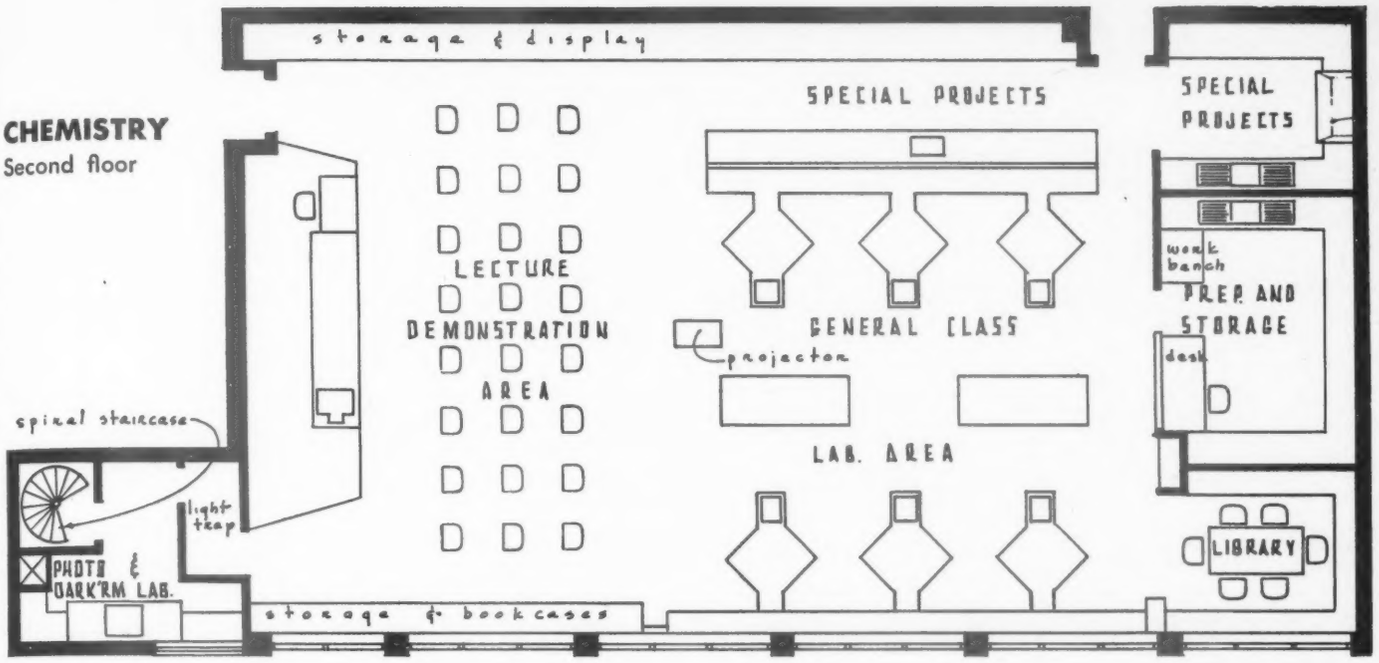
The electronics lab provides interested students the space and equipment they need to study radio transmission and other related areas of electronics.

Students are presently building their own shortwave radio station to be housed in this laboratory. Built into one side wall are conduits through which wires and cables can be drawn at a later date to connect with radio equipment and weather instruments, which will eventually be located on the roof. The electronics lab also contains a large picture window through which the instructor can visually supervise students while busy in the lecture or lab area adjacent to it.

The demonstration area of the lab contains a raised platform at the teacher's lecture station. There is another teacher's desk here for the instructor's teaching materials, supplies, tests, etc. (While one teacher conducts a class session in the lecture area, another can use his free period at the desk in the prep-storage room to prepare his next lesson.)



Science wing, added on to main building, is brick structure with cupola.



The entire laboratory ceiling is covered with acoustical tile. Side walls are surfaced with peg board for hanging shelves to hold clocks, instruments, experiments, projects, displays, etc. A TV outlet is located under one of the blackboards and room darkeners are available for audio-visual presentations. Convenience outlets for projection equipment and a built-in viewing screen are also features of both the physics and chemistry labs.

Photographic lab

Two completely equipped darkrooms—one on each floor—are used by students conducting studies of light or experiments with radioisotopes and atomic energy. Traffic passes from the labs through the darkrooms—by means of light-trap doorways—to the spiral staircase connecting the two levels of the science wing.

Radioisotope storage

At the base of the spiral stairway are radioisotope and atomic energy materials storage wells. Shielded by two feet of concrete and a lead coating around the inside, the wells are covered by two-and-one-half inch lead covers which fit flush with the floor.

Chemistry laboratory

Many features of the second floor chemistry lab are similar to those contained in the physics area on the floor below, though there are some specific differences. The general layout is the same, containing a lecture-demonstration area, the lab proper and special project spaces (*see floor plan*). Diamond-shaped tables, accommodating four students each, are used here. The tables form islands extending out from the side wall cabinets, and a sink can be included at the end of each without taking away any essential student work space. Two stone-topped tables in the center of the lab area are used for the distribution and weighing of chemicals used in student experiments.

Highly concentrated chemicals are stored in the prep-storage room where the instructor dilutes and distributes them to students as required. Storage and drying racks for glassware and other small items are located here, as is a wood-topped work bench for the teacher's use in building the equipment he needs for experiments and demonstrations. As in the physics lab, a teacher's desk, placed before a large picture win-

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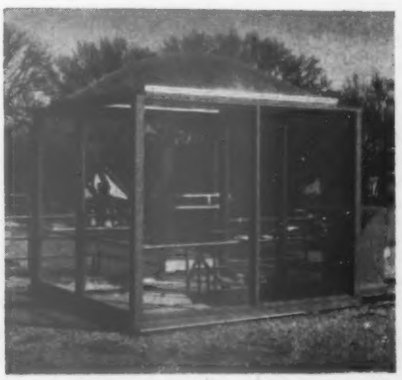
Special projects area in physics lab.

Built-in hooks for physics apparatus.



Plexiglas cupola is rooftop lab.

Are your elementary schools ready for a foreign language program?

If your district is considering an elementary foreign language program, this article offers a planned approach. If your program is established, but problems are cropping up, here is how schoolmen solved similar ones. If you've had success with foreign language instruction, here's a chance to review your program.

■ ■ ■ Current pressure for foreign language teaching in the elementary schools springs from one unalterable fact. Children reach their peak in listening and imitating skill between the ages of five and ten. During these years, a child's ear picks up accents and pronunciations, and his tongue repeats them with effortless flexibility.

This skill, called aural-oral is basic to a quick mastery of any language. When it begins to decline, language teaching becomes more difficult.

While foreign language teaching at the elementary level is increasing, there's nothing new about the program. Witness:

- French has been taught in elementary schools in Lexington, Mass., since 1953.
- Freshmen entered Somerville, N. J.'s, high school in 1954 with five years of elementary school foreign language training.
- In 1955, 17 Metropolitan School Study Council systems had foreign language programs in their elementary schools. One had introduced it in 1935.

Before any district undertakes foreign language instruction, it should investigate four areas—time, teachers, money and public interest. If any of these four are lacking, development of a successful program will be difficult.

Foreign language instruction should be part of the regular school schedule, though some districts have expanded the day to provide time. If there is no room in your district's schedule, there are still ways to begin instruction without adding to the length of the school day.

Finding time

Most language programs are started in the third grade. At this level, 15 minutes are usually devoted to the subject, three days a week. But in the third grade, foreign language can be a fun activity. The teacher can create opportunities for children to use and hear the language in everyday classroom situations. It is not necessary to schedule it as a special part of the day. (Some teachers have even used lunch periods to introduce foreign languages into the program.)

By the fifth grade, however, the program should become a basic part of the curriculum, even though it is still taught only three days a week, 15 minutes a day. In general, by the seventh grade, 45-minute periods are introduced three days a week. Full time, daily instruction almost always begins in the ninth grade.

Who should teach?

Getting proper instruction is a more difficult problem. Some districts have depended on the varied skills of teachers already in the system. Others have hired a language specialist who goes from class to class teaching the one subject. Still others have sent groups of teachers to schools and colleges where they can learn the language and how to teach it.

The language specialist, being thoroughly prepared in foreign languages, in elementary school methods, and in child growth and development, is the best bet to run a successful program. He has time to plan and prepare his classes; and his less frequent contacts with the children make the foreign language course

something special. He can also provide leadership for the rest of the faculty.

If your district can't afford, or can't find, a language specialist, many teachers presently on your staff may be capable of teaching a language. In some districts, teachers speaking a second language are sent from class to class to give instruction in the subject. In other cases, they act as resource persons for teachers less proficient in the language.

In-service training programs have been used successfully to add to the core of qualified language teachers. These can be taught by someone on your own staff, by faculty members from a nearby university or, perhaps, by a foreign national living in your own community.

Teachers can also get training through courses at nearby colleges. Many districts have worked out arrangements to give extra credit to teachers taking these courses.

Teacher sources outside the elementary school include regular high school language teachers whom you may assign to the elementary system. Professors and undergraduate or graduate language majors from liberal arts colleges or teachers colleges might also be approached. Exchange students, with native proficiency in foreign languages, are another potential source of instructors.

Radio and TV can provide instructional help as well. Many districts use local TV stations to relay language sessions to all their schools. Records are also valuable teaching tools. They furnish models for songs, speech-participation and choral repetition by the class. Tape recordings are easily adaptable to class needs. They may be used in question and answer sessions and to correct pronunciation. Electronic language labs can also be effective.

How about financing?

Although there are ways to cut costs, it would be foolish to enter a foreign language program with the

MLA 10-year plan

Every district will have to devise a program to suit its own school needs. Here is a place to start. This instruction plan, designed by the Modern Language Association, is a framework for your own foreign language program in elementary schools.

GRADE	CLASS TIME	AUDIO-LINGUAL EXPERIENCE	KNOWLEDGE OF STRUCTURE	READING EXPERIENCE	WRITING EXPERIENCE
3-4-5	5 15-Min. periods weekly	Dialogues for imitation and memorization			
6		Drills and exercises	Formal structure or pattern drills	First visual access to materials learned in grades 3-4-5	
7	3 full periods weekly	Narrative selections presented orally, some old materials, some new cultural materials Dialogues and drills continue Electromechanical aids to reinforce and evaluate		Emphasis on reading as a skill	Copying known material at home; dictation of prepared, assigned materials
8		Dialogues and drills on basic sentences	More emphasis on structure drills	Reading aloud in imitation of the teacher; introduction of new words in the foreign language Homework reading for comprehension without translation	
9	5 full periods weekly	Increased use of pictures, readings, recordings with varied voices	Teacher begins to label and summarize grammatical patterns after the drills are mastered	Glossaries in the foreign language	Students imitate native models and use simple paraphrase techniques Some written pattern drills
10		Radio programs and films Discussion of reading and culture	Structure drills continue	Foreign language dictionary Plays and stories	More written pattern drills Varied paraphrase techniques Directed compositions, résumés, etc.
11		Everything that concerns the class is a basis for conversation	Structural knowledge now complete; structural summaries	Nonfiction, including magazines and newspapers	Written summaries of oral discussions Area-study notebooks
12	3 or 5 full periods weekly	Literary discussions		Literary materials	Brief introduction to translation

idea that it will add no extra expense to the school budget. At the very least, it will be necessary to buy materials. At best, such a program may involve new staff members, school-sponsored training for classroom teachers, electronic equipment, supplies, exhibits, etc.

Parent-teacher association fund support is one method of financing the program. In some districts, PTA, home and school associations, or foreign language groups pay a qualified person to teach. Parents of children in the program sometimes pay a yearly fee for the teacher's salary.

These methods can be used to start instruction in communities where taxpayers are skeptical about the program. After it has been accepted, however, permanent sources of finance should be adopted. Material costs can also be paid for under Title III of the National Defense Education Act. Under Title III, the government will pay up to 50% of program material expenses.

Public acceptance

Finally, there is the matter of public support. Community enthusiasm for foreign language instruction can best be obtained, if the program represents the interest of the citizens.

"Our program is well established now. I'm sure

One Pennsylvania school district, noted for its academic achievement, found the student enrollment in its French program far below predicted standards. A community poll showed 78% of the community was of Polish extraction. When Polish replaced French in the curriculum, the program boomed.

Many districts have experimented with foreign language teaching for a year, using teachers who are interested and qualified without needing further instruction. This gives the district a chance to iron out problems in the program and also to show the public just what is involved and what can be accomplished.

Public support can also be gained through the use of electronic teaching tools. Foreign language radio broadcasts in Miami, Fla., and Cleveland, Ohio, not only reach students but bring interested parents and other community members into contact with the program.

Foreign language instruction is an established part of the curriculum in the Greenwich, Conn., elementary schools. In the following interview, **Dr. Kenneth C. Coulter,** assistant superintendent of schools, discusses the Greenwich program with a SCHOOL MANAGEMENT editor.

Q. Dr. Coulter, did the Greenwich schools experiment with elementary school teaching of foreign language before instituting the program? Or did you start right out with a full program?

A. We started slowly, using experimental classes to feel our way along. For three years, we held classes after school and at noon. They were taught by PTA volunteers and interested teachers. The final decision to go ahead with a complete program was made after Superintendent John Blackhall Smith, working with a committee of language teachers, principals and others for a full year, determined that a total program would be feasible.

Q. When did you introduce a full-scale program into the schools?

A. We began the full program in the fall of 1959. It was introduced in the third grade; we will add one grade each year.

Q. Under your program, does every elementary student study a foreign language?

A. Here's how we run the program. *All* third graders are given 20 minutes of instruction, three times a week. Teachers use the aural-oral method and emphasize developing speaking facility. The same program continues in the fourth grade. At the end of the fourth grade the plan is intensified. Children are not required to study foreign language so this gives any pupil who lacks sufficient interest the chance to drop out. We also expect to drop those whose work record, in this and other subjects, indicates they ought not to continue.

Q. What languages do you teach?

A. During the first year we limited the program to French. We are thinking about adding a second language—probably Spanish.

Q. Why did you choose French to begin the program?

A. There were two main reasons for choosing French. First, French seems to be the most popular language. Enrollment in high school French classes exceeds any other language. And, in recruiting teachers, we found French teachers were more readily available.

Q. Are your teachers trained specifically to teach languages in the elementary schools?

A. Yes and no. We have four teachers of foreign languages in our elementary schools who are supervised by a top language consultant. Three of the four have experience at the elementary level.

Q. Does the extension of foreign language teaching to a 10-year program—the third through the 12th grades—present problems in providing sufficient time?

A. Fortunately, we were easily able to supply the extra time without eliminating other subjects. Prior to the proposal of foreign languages in the elementary schools, we were planning to lengthen the school day by 15 minutes. So we introduced 60 extra minutes of French within the 75 minutes per week extension.

we'll continue teaching foreign languages in our elementary schools."

Q. Does teaching foreign languages in the elementary schools create problems for your high schools?

A. Not for us. Since this is a unified system, it is fairly easy to adjust our program. We will eventually be teaching in the seventh grade a part of what is normally considered ninth-grade French. The high school teachers will simply pick up from there. In cases where the elementary schools are in a different system from the high schools, I would imagine this might be a problem. It certainly would be wise for the elementary people to meet with the high school teachers, before starting their program.

Q. How do pupils react to the language training?

A. Pupils regard foreign language as fun. It's normal for them to enjoy learning new languages since their minds are free and capable of grasping new ideas quite easily. The program adds spice to their learning experience.

Q. How do you finance your program?

A. We have budget allowances from the board of education for the program. And, under Title III of NDEA, we will be granted funds for added teaching materials. Major costs, though, will be financed by the board.

Q. Do you provide anything special for academically talented youngsters?

A. At the end of the fourth grade, as I said earlier, the plan is intensified. This means that any who continue after that are academically qualified. At the seventh-grade level, the best students will be grouped for special study.

Q. How do you test students?

A. At the elementary level, there is no "testing" as such. Teachers, supervisors and principals review the students on how well they can speak and present phrases, and how they have developed intonations. At the junior high level, regular testing is introduced.

Q. Do you use any audio-visual materials to supplement your elementary language program?

A. We limit use of these materials to two or three carefully selected motion pictures and slides. Tapes, records and recording devices are not greatly used, although these are being fully explored. The reason we limit use of technical devices is that speech perfection is our primary goal. With only 20 minutes for each language period, we feel that too much time would be lost in getting set each day for the use of electronic aids. This limits the first years to direct teacher instruction. As the youngsters grow, we broaden the program.

Q. Do you plan to train teachers in the future? If not, how can they receive training?

A. I have a great feeling that training schools will soon be turning out the needed teachers. Since high standards are so important, teachers with a quantity of credits in foreign language study will be made available to elementary teaching. We feel we cannot adequately train them ourselves.

Q. Has your program worked?

A. The first year was highly successful. The development was satisfying even though we are still on the ground floor.

Q. After one full year of operation, what do you see ahead for Greenwich?

A. I think our program is well established now. We have public support and we have teachers. I don't think there's any doubt that we'll continue teaching foreign languages in our elementary schools.

Q. Dr. Coulter, do you think any district could start a successful foreign language program?

A. It depends on the support the schools can find in their communities. Greenwich was lucky. Our parents and our staff wanted to teach foreign languages in the elementary schools. With this kind of support, we were able to raise the money to finance a proper program.

If a district lacks this support—or if its financial situation is such that it cannot afford to start a program—I think it should consider a modified program. For example, foreign languages could be moved down only as far as the seventh grade—and there they could be taught intensively. I think it's silly for a district to start a foreign language program if the rest of its educational program is not as good as it should be. Other considerations come first. For example: Are the teachers well paid? Does the district have a top-flight guidance program? Are basic studies getting all the attention they deserve? If the answers are "no," then money available for the foreign language program would be better spent in these other areas first. **End**

How to add the personal touch

Machine scheduling of courses in giant Evanston, Ill., high school has resulted in more—not less—personal attention to the needs of individual students. Here's how it's done.

By JOHN GREER,
Coordinator, Research & Evaluation, Evanston Township, Ill.

1

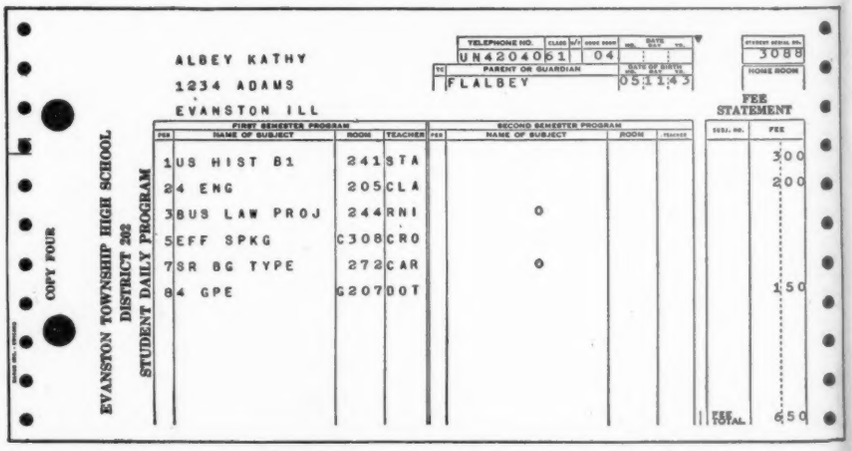
2

Operator cuts class cards *(above)* from which master schedule is made. Sorter *(below)* detects conflicts.

■ ■ ■ Students are receiving more personal attention at the time when they need it most—during scheduling difficulties—as the result of the use of punched card processing equipment at Evanston Township High School.

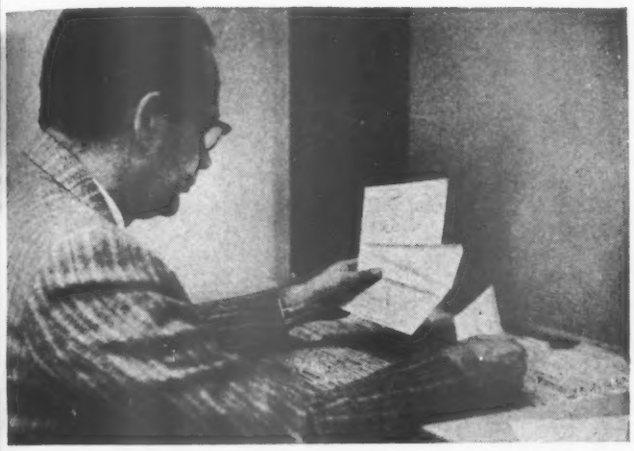
No decisions are being made by machines. However, machines handle clerical problems at a speed which enables us to devote more time to making decisions.

With machines eliminating time consuming paper and pencil work, course conflicts are solved for our 3,500 students the semester before

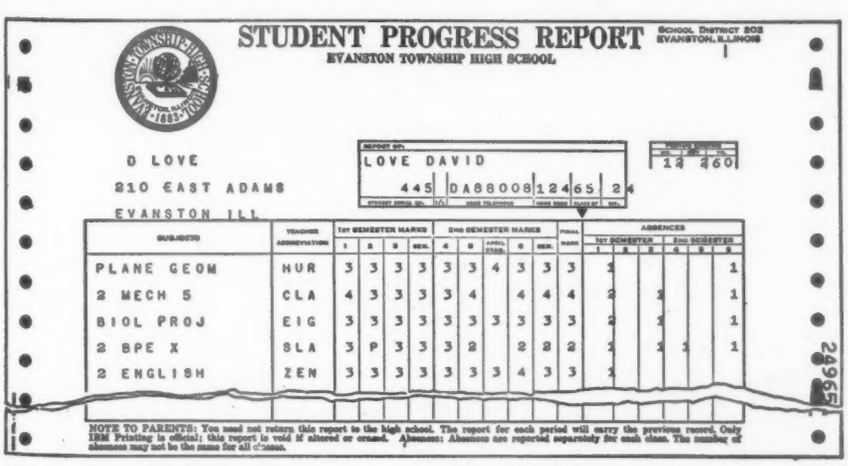


Six copies are made of each student's daily schedule.

to scheduling with machines



Assigner pulls cards from tub *(above)* giving each personal attention. Machine *(below)* produces reports.



STUDENT PROGRESS REPORT
EVANSTON TOWNSHIP HIGH SCHOOL
SCHOOL DISTRICT 202 EVANSTON, ILLINOIS

D LOVE
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EVANSTON ILL

REPORT NO. LOVE DAVID
445 DA88008 12 65 2
12 260

SUBJECTS	TEACHER ABBREVIATIONS	1ST SEMESTER MARKS 1	2	3	SEM.	2ND SEMESTER MARKS 4	5	ANNL. EXAM.	6	SEM.	FINAL MARK	ABSENCES 1ST SEMESTER 1	2	3	2ND SEMESTER 4	5	6
PLANE GEOM	HUR	3	3	3	3	3	3	4	3	3	3	1					1
2 MECH S	CLA	4	3	3	3	3	4		4	4	4	2		1			1
BIOL PROJ	EIG	3	3	3	3	3	3	3	3	3	3	2		1			1
2 SPE X	SLA	3	P	3	3	3	2		2	2	2	1		1	1		1
2 ENGLISH	ZEN	3	3	3	3	3	3	3	4	3	3	1					

24955

NOTE TO PARENTS: You need not return this report to the high school. The report for each period will carry the previous record. Only IBM Printing is official; this report is void if altered or erased. Absences: Absences are reported separately for each class. The number of absences may not be the same for all classes.

Report card tells grades for year, records absences, too.

the problems arise. Now the schedule conforms to the student's needs instead of the student having to make unsatisfactory last minute changes to accommodate the schedule.

Prior to the installation of IBM equipment, some 280 conflicts faced counselors and students in August, only days before the opening of school. This year it was possible to resolve all existing conflicts before the beginning of school.

Three staff members (assigners) now spend five weeks during the summer scheduling students into their elected courses. These assigners are able to take the time to consider such questions as which teacher might be best for a particular student, which student should have classes on the first floor to avoid stairs because of a physical handicap, etc.

Previously, 12 temporary clerks, four men and one secretary had to work for five weeks—the equivalent of one full-time clerk for one year—at top speed to assign students to classes. There was little time for individual care and attention. In addition, 10 homeroom directors were called upon as part of their duties to assist in resolving conflicts during the week prior to the beginning of school.

Student information cards

Business machines are utilized for handling records on the first day of school for entering students. At

that time, each student fills out a general information card. The school adds a serial number to identify the student throughout his four years, and his homeroom number. This information is punched into a student information card.

The big job of scheduling starts with subject election cards, filled out by students in March or April. Students select their courses with the approval of counselors and parents.

The subject election card has ample space for the counselor to make notes to aid the assigner in the summer. He may recommend a certain teacher for the pupil, or call attention to special cases such as that of a boy with a heart ailment.

Information from these cards is key-punched into subject election cards which are put through a sorter to determine the number of students electing each course. This figure is divided by the number of available pupil stations to determine how many sections of each course are required.

We are now ready to decide on the room, section, teacher and period of the courses. Then, by sorting the various courses, we are able to discover conflicts, call in the students and resolve the conflicts by the beginning of the school year in September. Thus, we adjust our schedule to the student.

During June and July, we punch one master card for each course. Then, the number of cards corresponding to the number of students who will be allowed to enroll in the course are reproduced automatically and placed behind the master card in a tub file, to await actual course assigning. Cards with a red strip across the top are for odd-numbered periods, cards with a green strip for even-numbered periods.

When course assigning is done by staff members in August, they have the student election cards at hand, with the notes expressing preferences and making requests. The counselors pull the course cards from the tub file and place them behind the student information and election cards. Cards for lunch period, study hall and homeroom are then inserted. We now have an information card, election card, and course card for each period for each student. The color coding tells at a glance if the periods are incorrectly assigned.

From the cards, we print six copies of the student's daily program. The program includes the student's subjects, rooms, teachers, periods, and fees. The same form is used for both semesters.

One week before school starts, programs are distributed to the main office, hall office, homeroom, counselor and health service, and a copy is mailed to the student.

We also print a list of students enrolled in each class. This is made available to each teacher before school starts. In the past, a list was made from those present in class the first day. This, of course, was an additional burden for the teachers and wasted the first day of classes.

For report cards

Our data processing system is active in many other areas in addition to student scheduling. It is bringing accuracy, speed, and uniformity to grading, standard test scores, students' permanent records, student fee accounting, attendance town-

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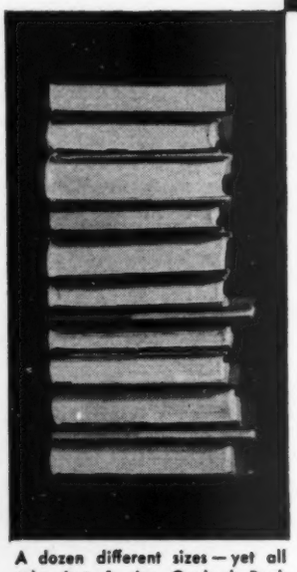

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ship treasurer's report, homeroom lists and all school lists.

Possible future applications include the compilation of the honor roll and the preparation of athletic eligibility lists.

Grading, done every six weeks during the academic year, has been greatly simplified through use of our equipment. Teachers simply enter grades and absences on the students' class cards which are sorted into individual student decks and put through an accounting machine which prints student progress reports to be mailed to parents. The rapid fire machines produce four duplicates, so there is no need for parents to sign and return the reports.

Previously, the main office had a list of each course, produced manually. Each teacher had to come to the office, go through 3,500 progress reports to find her 150 student reports, take them to her homeroom and write the report by hand. This took 212 teachers about nine hours each at the end of each marking period.

In addition to grades, the reports also record class-by-class instead of day-by-day attendance.

Now, an absentee card is punched daily for each student absent from the first period class. The cards are placed in the accounting machine to print a list of that day's absentees on a duplicator master. We run off 250 copies of the list and get them in the teachers' hands by the third period.

From that point on, a teacher has nothing to do regarding absentees unless someone who is on the absentee list appears in class, or someone who isn't on the list doesn't appear.

The State of Illinois demands accurate, prompt attendance records. Going through each teacher's attendance card and adding the absentee hours used to take countless hours and sometimes led to costly mistakes. Now, using the file copy of each day's attendance total, two girls have our monthly records ready in two hours.

Standard test scores

We now keep records of the standard test scores made by all students on punched cards. This data is readily available for use by hall principals, counselors, and researchers. These scores are compared with the national norms and the local norms at Evanston. They are

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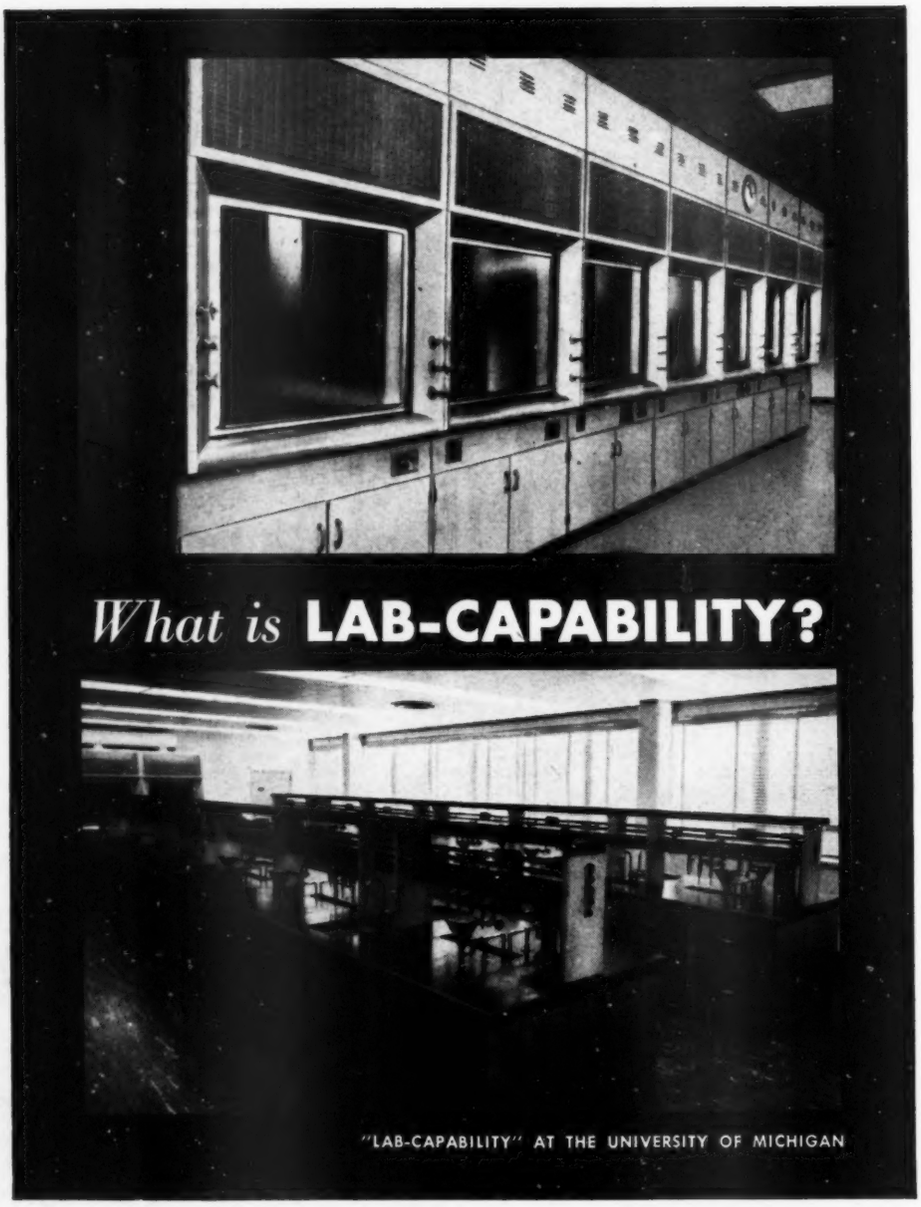

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used for diagnosing student weaknesses and in the initial screening for grouping students by ability.

Cumulative records

We believe we are the only school in the country that keeps a pupil cumulative record with the aid of data processing equipment. Taking facts from the student information card and class card, we have—at our fingertips—the entire record of students' grades and absences. Two copies of the record are printed on an accounting machine—one for the hall office and one for the mail office. A photo-copy of this record is sent to any college to which the student is seeking admission.

These reports are accurately produced in a matter of hours on the accounting machine. To write them manually would take several weeks.

The record is printed each June for freshmen, sophomores, and juniors, and at the end of the first semester of the senior year for seniors who need the report for college.

Student fees

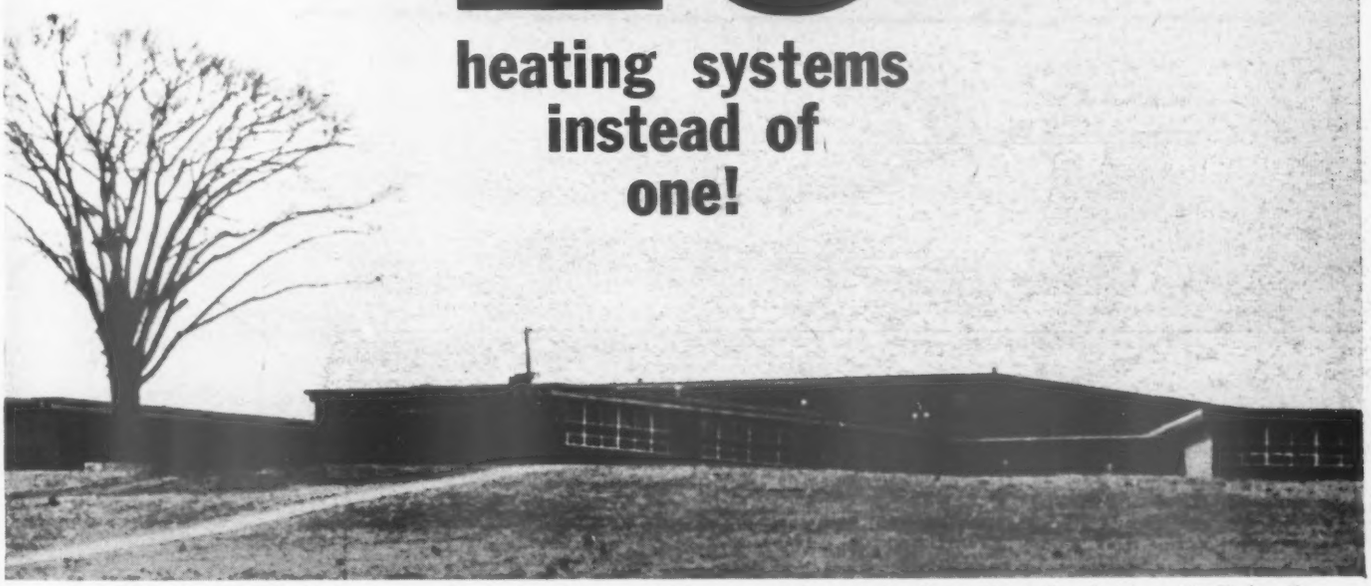
Calculating and billing student fees is now simply one more item transferred from the student class card to the daily program mailed to him one week before school starts. Most students, knowing their fee total in advance of the first day of school, come prepared to pay it.

It used to take 10 special clerks two weeks in September, and six special clerks two weeks at the start of the second semester, to write fee statements. This amounts to a saving of 32 weeks of clerical work at $1.50 an hour, a total of more than $1,900.

In addition, we are able to sort our cards for any specific information anyone in the school system may want. A certain teacher may want to know boys' birthdays; a swim instructor may want home addresses in case of emergency. We sort the cards and the information is available in minutes.

The use of our punched card equipment seems to be limited only by the jobs a school needs done. Ours is a big school doing many big jobs. Since the installation of this equipment, we are able to do them more quickly, more accurately, more economically and with the necessary uniformity. **End**

With GAS this school saves money with 23 heating systems instead of one!



James Lane Allen School, Lexington, Kentucky, where each classroom is independently gas-heated and automatically ventilated with Norman Schoolroom Systems. Additional gas-fired units serve shower rooms, hallways, gymnasium and kitchen. Architects & Engineers: Meriwether, Marye & Associates; Consulting & Mechanical Engineers: Proctor-Ingels, Lexington, Ky.

The planners of the James Lane Allen School in Lexington, Ky., found the answers to some very important questions in their choice of gas-fired Norman Schoolroom Heating and Ventilating Systems.

Questions like these: Why install an expensive central system, when you can have individual heating units – including automatic ventilation – in each classroom? Why heat the entire building when some classrooms are not in use? Why be without the rapid heating speed and economy of gas?

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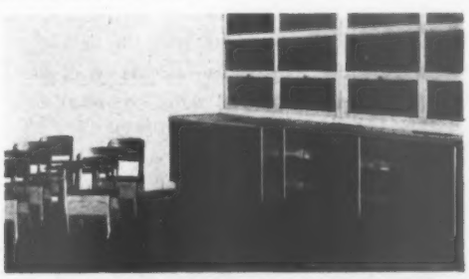

ROOM-BY-ROOM REQUIREMENTS MET WITH GAS-FIRED NORMAN SCHOOLROOM SYSTEMS

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FOR HEATING...GAS IS GOOD BUSINESS!

Have you considered multi-

Expensive laboratories, used only part-time, are a luxury most districts can't afford. That's why one school in Valley Stream, N. Y., designed its language labs for uses other than electronic teaching.

By THEODORE H. MARTLAND

Theodore H. Martland is business manager of Central High School District #1 in Valley Stream, N. Y.

■ ■ ■ When we first decided we wanted language labs in our district's high schools we knew that they would be costly. But money was not our major concern. A more immediate problem for us was the vitally needed teaching space the labs would take up in our 1,200-pupil buildings.

Most students can't profitably spend more than 20 minutes of each class hour doing intensive lab drills. We didn't have room for installations that would be used for only part of each day.

Our problem: To find language labs which could be used for other teaching purposes during the remaining portions of each period. Our solution: A laboratory room designed so that it could be used as a standard classroom when the teacher so desired.

Do-it-yourself

We developed a workable design by planning the labs ourselves and actually building the furniture we felt was needed to permit them to function effectively. As a result, we

purpose language labs?

now have one 30-pupil language lab in each of two high schools. Put into operation last September, the installations are used all day, every day, by our ninth and tenth grade foreign language students and to a limited extent by seventh and eighth graders.

One reason for the success of our program so far has been its acceptance and support by our teachers. They have been involved in the project from the very beginning. Two years ago, they began studying language lab installations in nearby districts. They examined them, worked with them and attended summer sessions at colleges where laboratory programs were offered.

Teachers consulted

When we asked our language people for their views of what a lab could—and could not—be expected to do in a high school, they were able to warn us about drawbacks they had seen in the installations they had visited. In fact, none of the labs they had seen in operation seemed to satisfy all the needs we had in mind for our own program. Here is a brief outline of what they told us they expected from our proposed language labs:

- Flexibility is the key to an effective lab. It must be possible to conduct other types of instructional activities—discussions, films, examinations, etc.—in addition to instruction with tapes.
- Full mechanical control by the teacher is critical—particularly when working with first- and second-year language students in the ninth and tenth grades.
- Student stations must be tamperproof. The fewer pupils required to handle equipment the better.
- Simplicity of operation so that the teacher can devote all of his class time to teaching rather than to setting up the equipment.
- Several tracks to provide for different levels or rates of instruction during the same period to the same group.
- Complete visual control of the room and students by the teacher.

How to design a lab

With these recommendations in hand, we began looking for equipment. Before long we discovered that there wasn't a console and booth combination on the market which would completely satisfy the needs expressed by our teachers. We realized then that the only way we'd be able to install the kind of facility we felt we required was by designing parts of it ourselves.

At this early stage, we decided to use stock electronic equipment. Designing our own would be costly, would entail a long delay and might give rise to maintenance problems later on. The greatest criticism we had received from our teachers was not related to such equipment, anyway. They objected, in the main, to the design of the student booths that were currently available.

Our first consideration in designing our own student stations for the lab was flexibility. We sought booths in which the acoustical barriers could be adjusted according to need. If they could be put into place when in use and dropped out of sight when no longer needed, we could convert the laboratory into a conventional classroom very simply. Since each student would have earphones covering his whole ear—and wouldn't be projecting his voice when speaking into the microphone—we felt that an acoustical barrier at the front of the booth was unnecessary and interfered with supervision.

The student station design we came up with seemed to fulfill all the requirements asked for by our teachers (*see photo page 86*). Each lab has five tables accommodating six pupil stations. The individual stations are separated from each other by a movable acoustical barrier which is raised during lab sessions. After the strictly electronic portion of each class session is over, the barriers are lowered into the tables permitting students full view of the entire classroom, including chalkboards on the side walls. The microphones and headsets remain in sight, yet are out of the way. (*See box above for details of this unique "storage" idea.*)

Costs

In order to keep costs down, we decided to have our booths built in our own shop by the school carpenter, and put the manufacture and

HOW TO MAKE A MIKE "TAMPERPROOF"

Schoolmen in Valley Stream, N.Y., decided to leave microphones and headsets out in the open when they designed their own language labs. The reason was simple: if the equipment (worth $50 per unit) remained in full view when not in use, the chances of students tampering with it and destroying delicate parts were much reduced. So the mikes and headsets hang on a steel rod at the front of each student booth about 24 inches above the surface of the pupil's work table *(see photo)*. Since the lab instructor can see them plainly when they're not in use, there is little possibility of students toying with them during class. Since the labs were opened last September, there hasn't been a single case of students tampering with the headset equipment.

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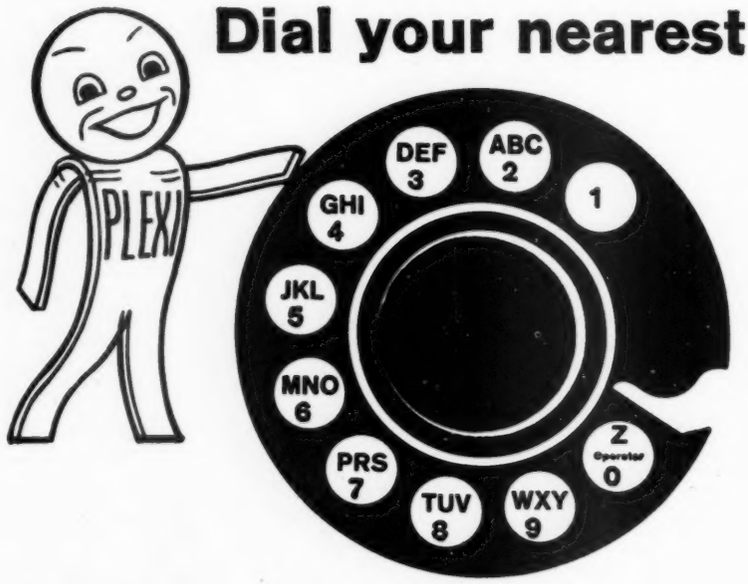

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installation of the electronic equipment out to bid.

Low bid for the manufacture and installation of the electronic equipment—including master console, earphones, tape recorders, wiring, etc.—came to $4,200 for each school. One estimate for the outside construction of our student booths—oak legs and understructure with plastic covered tops and sides—came to $3,200 for the 60 pupil stations we desired. By building the booths in our maintenance shop we kept costs—including labor—under $1,800. (Our application for reimbursement under Title III of the NDEA included only the cost of materials needed. This is in keeping with our policy of holding requests for funds to a minimum while remaining able to provide the quality program our residents demand.)

Results

In practice, our labs have been working out pretty much as expected during the past half year. We have found that this kind of language lab is best suited to first- and second-year language students who need a great deal of oral work and repetitive drill. Later on, we expect to encounter a need for more compact electronic centers with individual study facilities for more advanced, mature students. A third- or fourth-year language student, for example, is able to work more independently without considerable supervision and direction by the teacher. There would be less need for a master console as intricate as those we now use for students doing advanced work. This is something we expect to work out next fall with the staff of our language department.

But for the present, our need is for more of the simpler kind of labs such as those recently installed in our two high schools. Two more new labs presently under consideration are of this type.

By next summer, we hope to introduce similar facilities into our Memorial Junior High School. The design of this lab will re-emphasize the same points we found important for our high school installations. The only time students will actually handle equipment will be when they put on and take off their own headsets. All sound controls

this 18-row telescoping gym seat installation is operated MANUALLY

New Safway telescoping gym seat installation at Menomonee Falls High School, Menomonee Falls, Wis.; architects—Kloppenburg & Kloppenburg, Milwaukee. Seating set-up shown is duplicated on the opposite side of the gym (total capacity 2,370).

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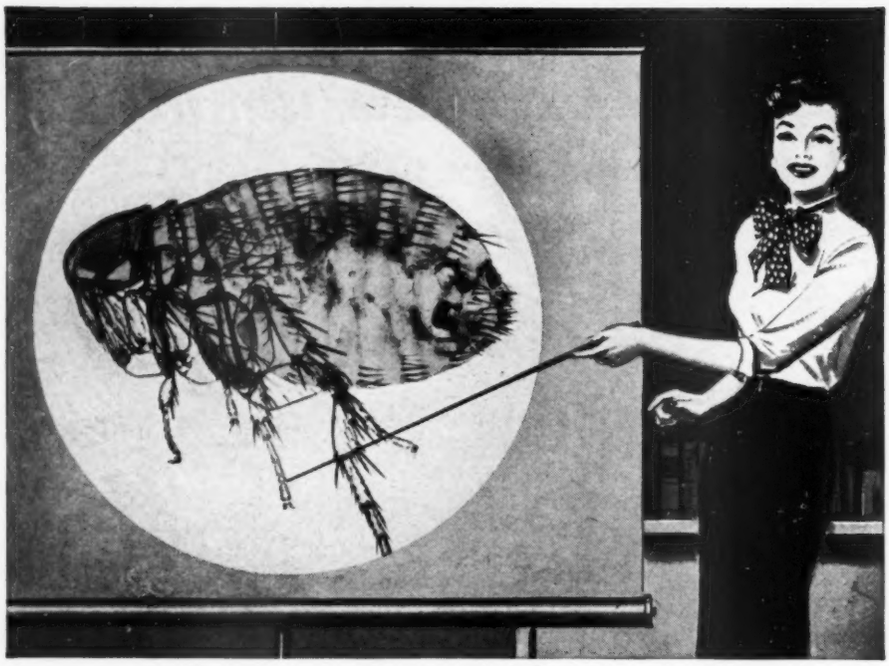

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—from the console or from the student microphones—will be handled by the instructor.

Future applications

Looking even further ahead, we foresee the use of electronic installations on a larger scale than we are limited to at present. One of our high school chemistry teachers is certain that he could cover a great deal of the rote learning required in his course far more rapidly with the aid of an electronic lab. Our speech department has, of course, been using tape recordings for the past 10 years or so. But the pupil-teacher ratio in speech correction sessions has always been limited to two or three to one. We hope, eventually, to conduct large group sessions in the laboratory during which an entire class of 30 or more can practice speech improvement at once.

Business education is another area we plan to explore. This kind of equipment can be a great aid to youngsters practicing typing or taking oral dictation. But the most exciting prospect, to us, is the way electronic facilities can be adapted to new ideas in teaching methods and learning techniques.

For example, teaching loads could conceivably be re-scheduled into large and small group sessions. With classes of 60 pupils, the teacher in the instruction lab might be assisted by a lab technician. The technician could "program" the lab in accordance with the general plan while the teacher circulates within the class to observe and personally help individual pupils having difficulty. Two such large group sessions per day would permit the teacher to meet with several smaller groups of 15 students or less while still maintaining his daily pupil load. Our present labs could provide the basic design for the instruction areas used by such large groups. Laboratories with separate individual recording devices and fixed booths could then supplement our type of lab for use by more advanced students.

For the present, though, we don't want to bite off more than we can chew. We want to be sure we have enough operable labs for our present secondary school needs. Later, as the need arises, we can adapt our present design to the changing demands made upon it. **End**

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EXPLORATIONS IN EDUCATION

On a traveling language teacher

On enrichment for junior high students

On a college level honors program

The following case histories were submitted by readers in districts where schools are better utilizing staff, space or time. They are presented as part of a joint project with the Teacher Education Committee of the Massachusetts Association of School Committees.

TRAVELING LANGUAGE TEACHER FOR RURAL SCHOOLS

A PROGRAM CONDUCTED in upstate New York last year gives promise of showing the way to increased language study throughout the nation.

Twenty students from three different central schools, none of which could afford the services of a full-time teacher, studied Russian with an instructor they saw just once each week.

The schools, all members of the Catskill Area Project in Small School Design, became involved in the project when students exhibited an interest in studying Russian. Dr. Vladamir deLissovoy, a professor at a nearby college, agreed to teach the course.

Dr. deLissovoy met with the students at one of the central schools once a week for 21 weeks. Each session lasted 100 minutes. Between meetings with the instructor, students used books, records and tape recordings to keep up their studies.

The course was not taken for credit, so that when academic pressures from other courses interfered, some students dropped out. Altogether, 11 of the 20 who started completed the course. Nine of these were enrolled in one school where a member of the regular faculty had expressed interest in the study and worked along with the students.

Seven of the 11 who completed the course have a working vocabulary of 300 to 350 words. They can extend greetings, exchange limited small talk, ask simple directions and order food in a restaurant. Most of the students have the ability to read simple sentences. One girl has demonstrated outstanding ability in her knowledge of vocabulary, her understanding of terms and her use of them in conversation.

Although the results were not conclusive, administrators felt that the experiment proved that, through the use of electronic devices and with the aid of a "visiting" teacher, students could learn a foreign language. The results also showed, however, that more success can be expected if a regular teacher takes some role in the program.

Reported by Noble J. Gividen, formerly coordinator, Catskill Area Project in Small School Design, State University College of Education, Oneonta, N. Y.

ENRICHMENT, NOT ACCELERATION FOR BRIGHT JUNIOR HIGH PUPILS

SPECIAL PROGRESS CLASSES—which telescoped three years' work into two—have been replaced in New York City's junior high schools by advanced study opportunities for superior students. The three-year program was begun last September. The full benefit of the enrichment it offers (in social studies, language arts, science, math and foreign languages) will be attained when students reach 12th grade.

We had found that the practice of double acceleration, first in elementary school and again in junior high, often led to social and emotional handicaps for our intellectually gifted students in senior high school and college. Because our program does not advance these youngsters chronologically, they are thrown in with older, more mature students. However, it does stimulate them to greater use of their abilities by the introduction of advanced studies earlier in the school program.

Pupils above 120 I.Q. pursue advanced studies equivalent to 10th year work during their 9th year. These advanced studies do not receive credit toward high school graduation, but gifted youngsters are enabled to do even further advanced work during their high school careers.

Homogeneous groupings by ability are the rule in most advanced study classes. This practice, though, de-

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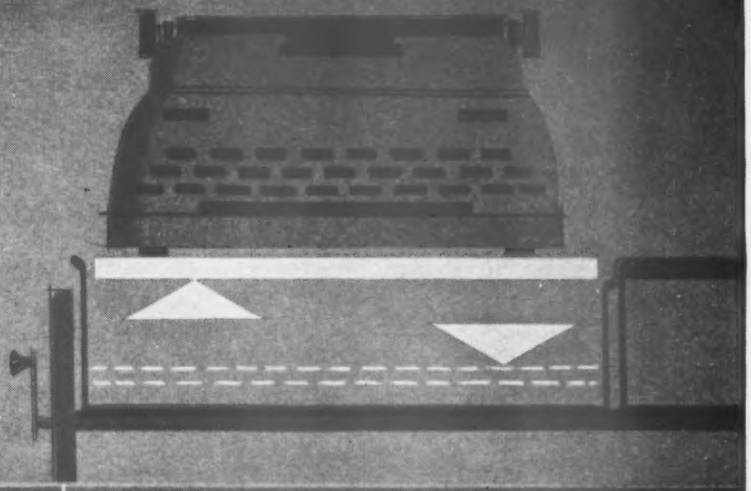

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EXPLORATIONS IN EDUCATION

continued

mands that we proceed now with modification of the curriculum in order to challenge all our abler pupils to their intellectual limits.

Reported by Jacob Evansohn, principal, James M. Kiernan Junior High School, Bronx, N. Y.

SCHOOL PROGRAM IMPROVED WITH RESOURCE TEACHER PLAN

THROUGH OUR RESOURCE TEACHER PROGRAM, schools in the Arden-Carmichael Union Elementary School District, Carmichael, Calif., have been able to upgrade educational quality in the classroom.

Under the plan, inaugurated last year, one master teacher is assigned to each school in the district. He serves as consultant, adviser and resource person to classroom teachers—and particularly to new staff members—in his school. In addition to these duties, he is also responsible for his school's remedial and library programs.

The resource teacher is in no sense a supervisor of instruction. He functions under the direction of the building principal. He is not expected to evaluate teachers or their classroom performance. Nor does he ever move to assist another teacher except upon invitation or upon assignment by the principal. The real value of the resource teacher is that his greater experience and ability are immediately on tap when less able members of the staff require assistance.

Our program was established only after long deliberation and discussion by both administrators and teachers. As a result, definite principles and objectives were established beforehand to provide a sound basis upon which to operate. Cost was one of the real considerations in our planning.

During the first year of the program, nine workshop meetings were held. These served as enrichment sessions for resource teachers as well as organizational meetings to coordinate activities of the entire program.

We think our resource teacher program has successfully met one of the major objectives set forth in the handbook devised for it: to improve the educational experiences of our youngsters through a more systematic direction and use of materials, equipment and skilled personnel.

Reported by H. E. Winterstein, assistant superintendent, Arden-Carmichael Union Elementary School District, Carmichael, Calif.

COLLEGE LEVEL HONORS PROGRAM FOR ABLE HIGH SCHOOL SENIORS

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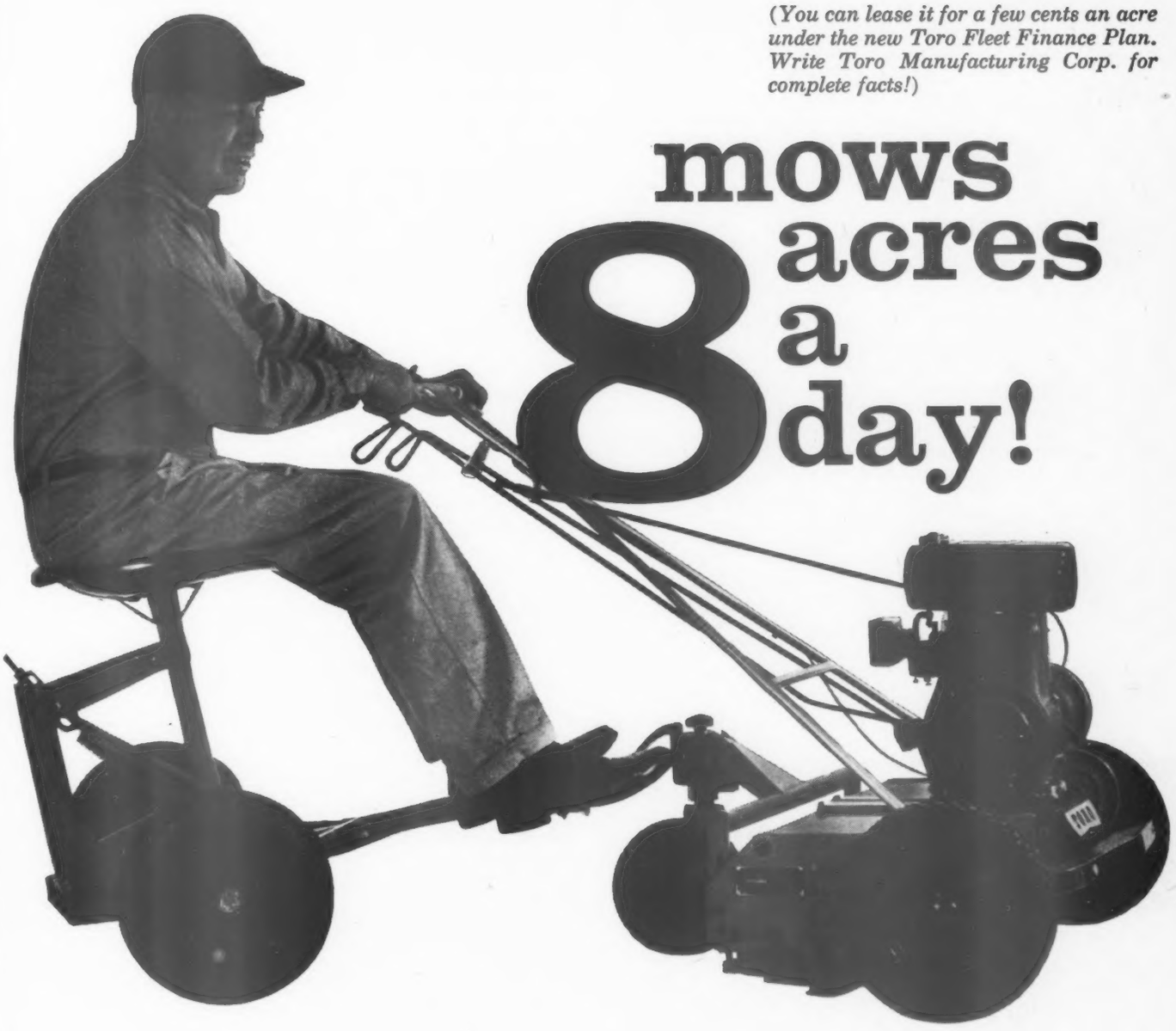

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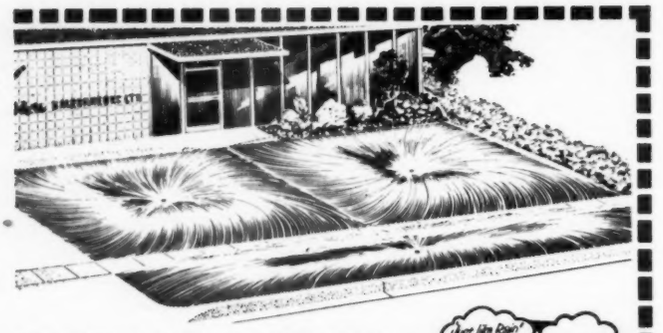

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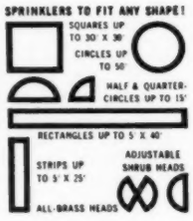
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four years ago to a total of 12 seniors. This year, the program's 30 students discuss assigned readings on the theme, "What is the good life?"

The material they cover is at a considerably higher level than that encountered by most high school students. Readings range from Plato's, "The Republic," to Schweitzer's, "The Philosophy of Civilization," with stops along the way for Aristotle, the Bible, Marx and Lenin, Arthur Koestler, Aldous Huxley, and others.

Seniors are invited to participate in the honors course upon the basis of their performance in four areas: high school grades, test scores, attitudes and participation in school activities. We encourage them to apply for admission, but they are told that they must keep up with regular school assignments as well as work in the honors program.

Response from students in the past four years has been enthusiastic. They feel that they have profited a great deal from their concentrated honors study, particularly since it has helped them cope with college level work after graduation.

We have profited as well. We have found that our high ability pupils have superior powers of analysis and general reasoning ability. We know that they possess high degrees of originality, resourcefulness, initiative and ability to interpret abstract ideas. But they need the opportunity to challenge these skills and develop them further. Our honors course offers them that opportunity.

Reported by Merle V. Chase, superintendent, Longmont Public Schools, Longmont, Colo.

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MOST ADMINISTRATORS would like to break out of the chronological straitjacket that scheduling traditions impose upon the high school curriculum. We have made a start in this direction with innovations introduced three years ago in our enriched program for superior students.

In the tenth grade, we offer American literature on a Monday-Wednesday-Friday basis and a course in composition on Tuesday and Thursday. Each course is taught by a different instructor. Eleventh-grade students spend a year on English literature on a Monday-Wednesday-Friday basis and choose among courses in creative, dramatic or journalistic composition on Tuesday and Thursday. The senior year consists of a three-period course in world literature. In the last half of the senior year, the Tuesday-Thursday sessions are devoted to unsupervised world literature research periods in the library or elsewhere.

Our social science curriculum is organized in a similar way. It consists of Monday-Wednesday-Friday lecture periods and Tuesday-Thursday research sessions in world history and American history respectively for the tenth and eleventh grades. In the senior year we offer civics during the first semester and a college level course in sociology during the second.

Some teachers were doubtful, at first, about the twice-a-week, unsupervised research periods, fearful that students would not perform well on their own. We

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How projected costs

ENTER YOUR SCHOOL CONSTRUCTION PICTURE

According to a recent study made by a team of professional architectural engineers, projected cost factors such as heating and maintenance can raise the ultimate cost to taxpayers of a hypothetical classroom as much as FIVE times—depending on whether the walls are made of brick, metal or glass. Here is a summary of their findings:

Wall Type	Initial Cost Per Sq. Ft.	Ultimate* Taxpayer Cost Per Sq. Ft.
Brick	**$2.30**	**$4.13**
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Glass	**$4.60**	**$20.48**

* *Based on 50-year life*

The details of this study—plus other important facts about school construction—are given in an interesting new booklet, "A FEW HARD FACTS ABOUT THE DESIGN, COST, CONSTRUCTION OF THE MODERN SCHOOL BUILDING."

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have found the opposite to be true. Our program, which assumes sufficient maturity and self-discipline on the part of advanced students, offers them an opportunity for intensive individual work. We insist upon quality work as a measure of whether they have been using their time wisely. So far, we have not been disappointed.

We have gained several advantages as a result of our accelerated program. We are able to choose our most competent instructors to teach specialties within the English offerings. We can now also provide greater instructional variety than before, because of the flexibility of scheduling. In a small way, we have broken up the formal regularity of the five-period week and given our bright students time and direction in special research projects. Finally, we can offer a greater variety of courses than before and schedule students' time more wisely for their study.

Reported by Robert Yerby, coordinator, La Puente District Recommended Program, La Puente, Calif.

INDEPENDENT STUDY FOR BRIGHT STUDENTS

LAST JUNE we successfully completed the first year of a seminar program designed to challenge superior juniors and seniors in our Los Alamos, N. M., high schools. We are now well along in a second year.

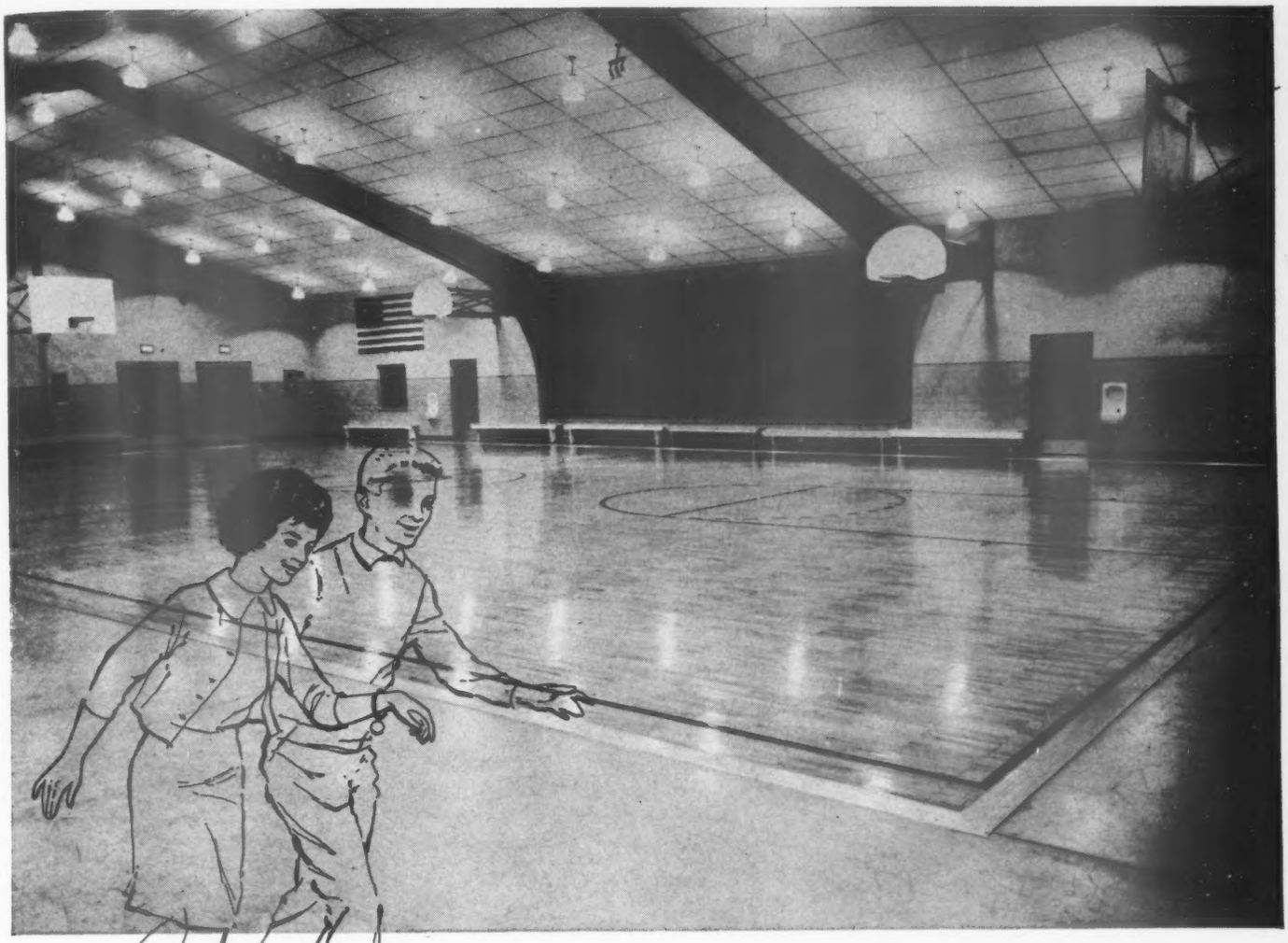
A semester's class schedule included approximately 10 lecture periods, 15 group discussion periods, two assemblies and 54 individual study sessions. Under the program, our students attended assemblies sponsored by specialists in a particular field, learned to organize materials into good written form and conducted independent research. After meeting with resource persons for lectures and demonstrations, the youngsters spent from one to three class periods reading about and discussing their subject of study among themselves. Then, the entire class reconvened for group discussion of the topic.

Under the guidance of a regular faculty member, our top students also engaged in independent study of timely subjects. A full credit in the social sciences was granted upon the completion of the year's work. They chose areas for study on the basis of their interests and personal desires. Each student selected an individual project in addition to those he explored with the entire group. Here are some examples of individual studies that were completed in the first year of our program: Radiation effects on chicken eggs; a comparison of the Los Alamos schools and the Conant Report; social and economic life of Communist China; and low temperature physics.

The chief responsibility of the faculty adviser was to administer and organize the program, largely by securing key resource people in the community and surrounding areas to present information in their special fields.

We feel that our program had considerable merit. It gave superior students a chance to demonstrate their initiative. What's more, they gained valuable experience in working alone as well as together in advance group study.

Reported by Superintendent Clarence W. Richard, Los Alamos Schools, Los Alamos, N. M.



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School employees are legally vulnerable

Your district may be immune from negligence suits, but your employees are not. Here's how to protect them against financial catastrophe.

By GLYNN R. ARCHER, JR., *and* JOSEPH M. LEPS
University of Florida, Gainesville.

■ ■ ■ Many school boards assume that teachers and other employees share the district's immunity from negligence suits.

Nothing could be further from the truth.

As a matter of fact, because of the common acceptance of the principle of school district immunity, negligence suits are being brought —and won—directly against the school personnel involved. They are legally vulnerable in cases of tort liability for negligence. (A "tort" is a wrongful act, except breach of contract, for which a civil suit may be brought for the recovery of damages.)

During the past two decades, there has been a significant increase in the number of cases where employees of school districts have been sued for damages because of pupil injuries. The average sum awarded in court has also risen.

The effectiveness of schools depends largely upon the security and morale of its employees, particularly those who have direct contact with students. The expanded programs of today put students into a variety of activities in which in-

WHAT CAN BE DONE?

■ Many insurance companies will issue blanket policies to school boards desiring to protect their employees.

In Great Neck, N. Y., schoolmen have obtained a policy which offers $500,000 liability protection for each employee, and a total of $1 million liability protection for each accident.

Dr. Ridgley Bogg, business manager of Great Neck schools, points out that although this is adequate coverage for his district (approximately 10,000 pupils), there are many considerations which should be taken into account when purchasing this insurance.

Examples of these are: number of students, number of employees, whether the district is urban or rural (transportation), and hazards in the school system (swimming pools, vocational shops).

In addition to the usual coverage of bodily injury, property damage and medical payments, the Great Neck policy includes the following clauses:

1. A malpractice clause which protects four part-time physicians and several nurses.

2. Liability protection on the district's vehicles.

3. Protection against product hazards. For example, pre-packed picnic lunches which may cause food poisoning.

4. Protection for contractural services, such as trucking.

"This policy," says Dr. Bogg, "was tailored for the Great Neck schools. It was taken out in the name of the board of education and protects all employees of the district, including board members, when they are acting in their official capacities."

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juries are likely to occur, and the greatest dangers are where one would expect them: laboratories, playgrounds, shops, vocational and physical education programs, and athletics.

If staff members hesitate to allow students to participate in these activities, their actions would affect the schools adversely.

Negligence defined

What constitutes negligence on the part of a staff member? Legally, negligence is the doing of something which a reasonably prudent person would not do, or the omission of doing what a reasonable person would do, under ordinary circumstances.

In deciding whether a person has been negligent, the courts emphasize the principle of "forseeability." When a regularly prudent person could have foreseen the harmful consequences of his act, he who disregards the consequences is negligent. There are no rules concerning negligence which can be applied in every case, other than the obligation to act as a regularly prudent person would have acted.

There are, however, circumstances which serve as defenses for persons charged with negligence. One is intervention by a third party. A case in point is that of a teacher who directed his pupil to clean a printing press. The pupil's hand was injured in the gears, but since a fellow student was moving the flywheel of the press, the teacher was absolved of lawful blame.

Another defense is that of contributory negligence, in which the injured person exercises less than reasonable care when sustaining the injury. A boy injured his foot when placing it through an opening in a bus floor above the wheels. Since he had been repeatedly warned not to place his foot through the opening, the court held the boy guilty of contributory negligence.

And a person charged with negligence can invoke that doctrine known as "assumption of risk" in which, for example, a student engaged in a football game assumes the risk of injury.

Partial protection

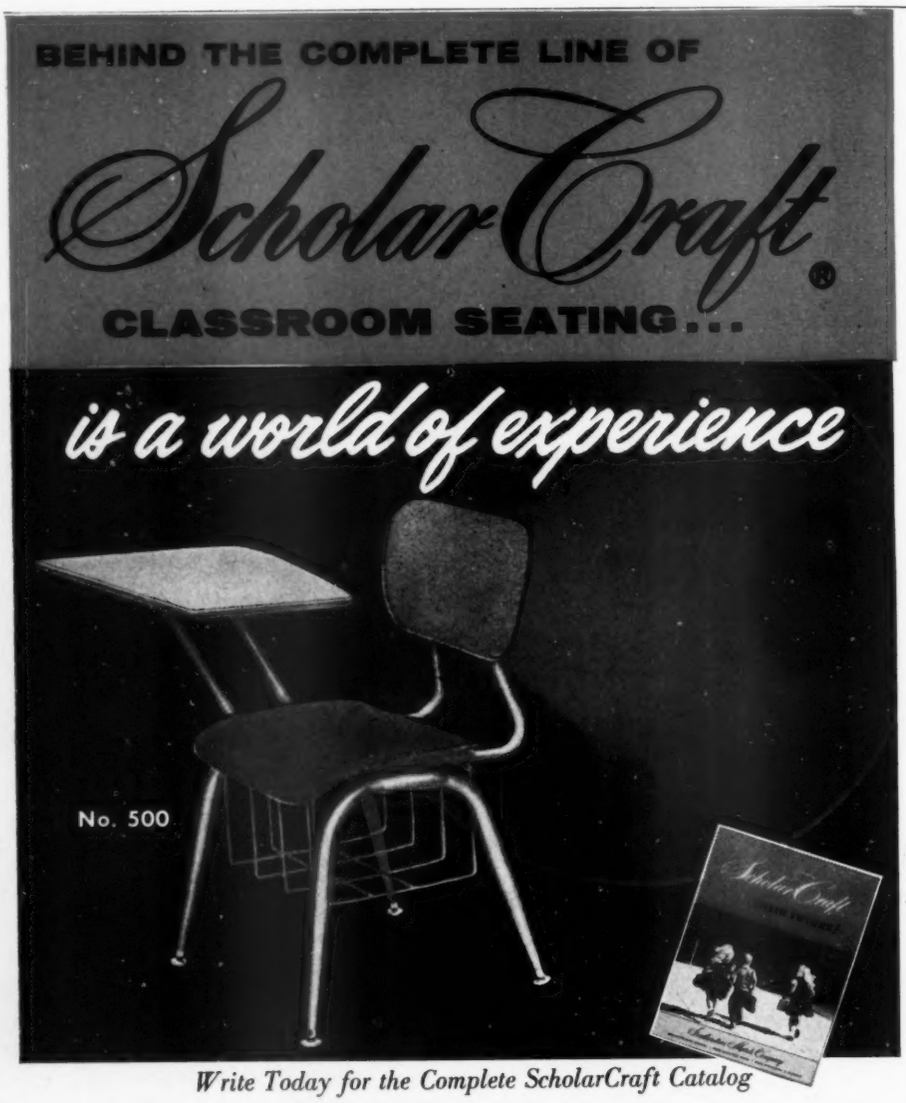
Some state teacher associations are providing a measure of protection by offering limited liability insurance for their members. This is a helpful temporary measure.

Several states have enacted legislation requiring the school district to reimburse any employee who is found negligent during the course of his employment. These laws, generally referred to as "save harmless" laws because of language used in the wording, do not make the school board liable for the employee's negligence nor exempt the employee from liability. They attempt to indemnify the employee against financial loss.

Many teachers, carrying liability insurance individually, have extended their residential liability policies to cover professional activities.

The ultimate goal should be legislation requiring all districts or school boards to purchase liability insurance for employees, including board members themselves, and the districts.

Such insurance would also protect public school funds from the possibility of judgments against the board arising from tort actions of their employees. **End**



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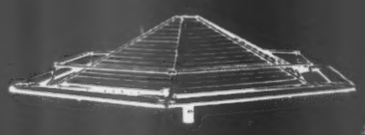
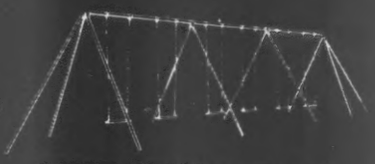


Extra Heavy Duty Merry-Go-Round—4½" o.d. galvanized steel pipe support plus finest select hardwood make this a lifetime service unit.



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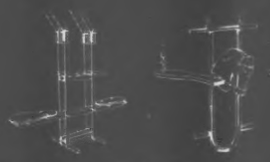

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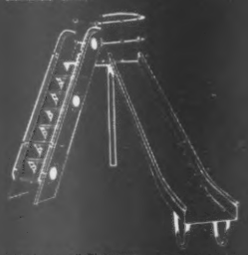

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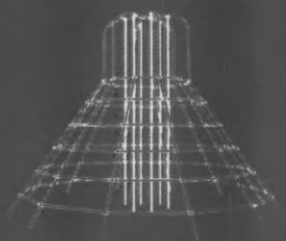

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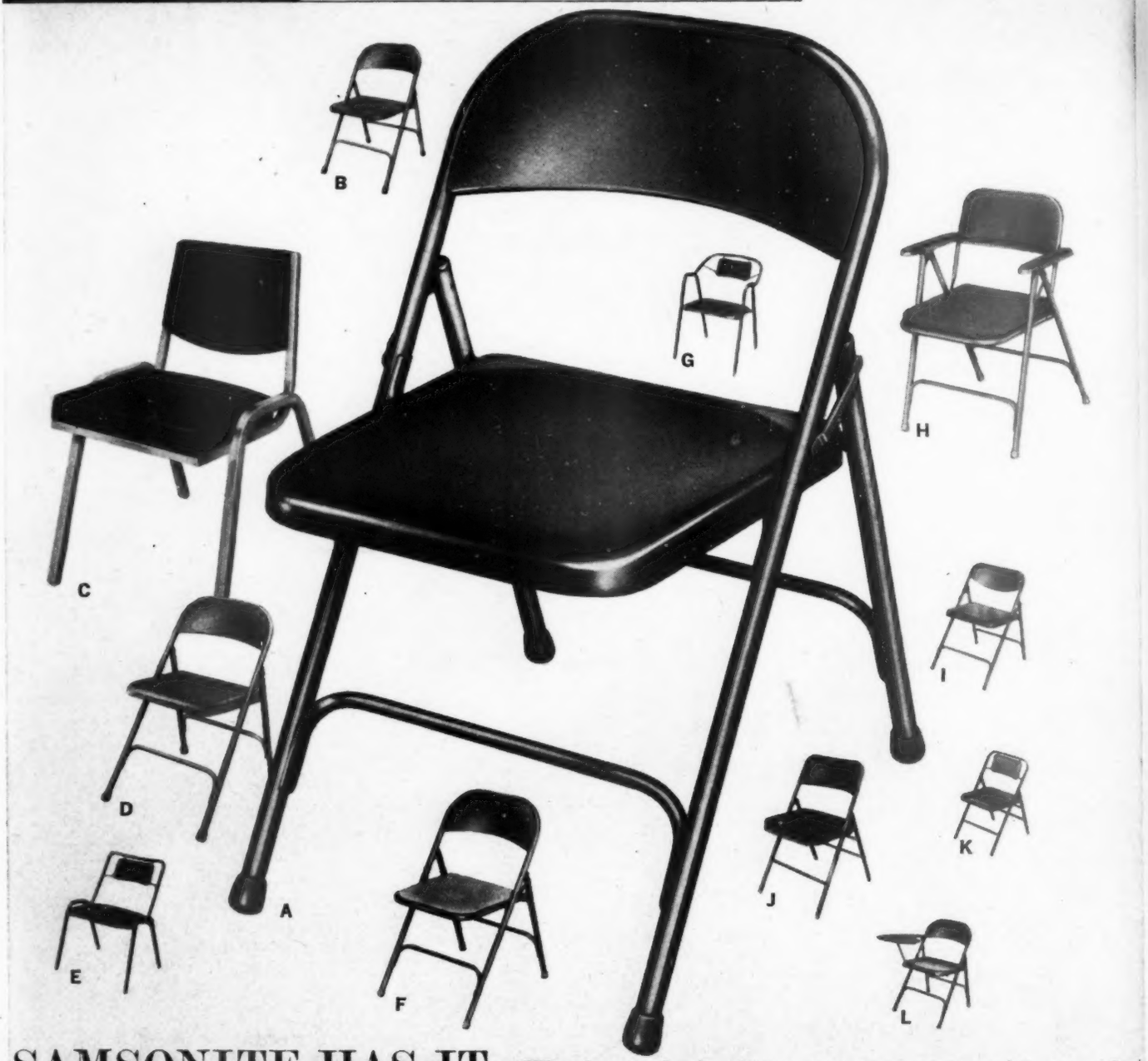

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THOUGHT STARTERS

A monthly review of ideas, new products and helpful hints

Schools talk to parents on report card envelopes

School authorities in Pittsburgh, Penn., have finally found a second way to use the plain manila envelopes in which, for years, students have been carrying home their report cards. Printed on two sides, the envelopes now inform parents about a recent change in high school graduation requirements.

Beginning in 1962, high school graduates with quality point averages of 1.5 or better will be awarded diplomas. Those with averages lower than 1.5 will receive certificates of attendance. This simply means that students will have to maintain an average between a "D" plus and a "C" minus in order to qualify for diplomas upon graduation.

How to be certain that all parents would be informed of the new ruling well in advance of 1962, posed a problem for local schoolmen until they hit upon the envelope message idea. One side of the envelope outlines the new diploma-certificate system. The other gives parents pointers on how they can help their children perform better and gain greater benefits during their high school years.

Future farmers learn to earn in field project

Agricultural students at Leslie High School, Leslie, Mich., are learning—through personal experience—about coaxing cash crops out of sub-marginal land. When they graduate, they'll be able to apply conservation measures—practiced at school—to farms of their own.

For the past eight years, classes have worked with Instructor Russell Miller to reclaim 80 acres of seemingly useless scrub and swamp land. The "wild eighty" was bought by the Leslie Public Schools in 1952. Proceeds from a student-run scrap drive and seed sale made up the down payment. Since then, the students themselves have kept up payments by felling trees on the land's woodlots and selling them for lumber, fence posts and firewood. For each tree felled, they planted a seedling replacement. They also drained a swamp on the land, dammed the creek and now have a six-acre lake which they've stocked with fish.

During the same period, they learned enough about contour plowing to plant acres of Christmas trees on formerly useless slopes. Proceeds from the sale of Christmas trees have added to the fund available for the reclamation project. Last year, the purchase of 20 adjacent "useless" acres gave the students access to the nearby Grand River. Now they're building a community lodge for winter skating, dancing parties, summer fishing, swimming and boating outings on the river. They've already dredged the river to make it navigable and plan to rent boats and canoes there once the lodge is built.

Principal's note goes to college freshmen

Graduates of Greenport, N.Y., public schools get some unexpected help from home during their first confusing week at college. Robert Neidich, supervising principal in Greenport, sends them each a personal note of warm encouragement to speed them on their way.

Neidich is simple and informal in his letter. He touches upon the importance of doing well in college, reminds each youngster how he will be missed back in Greenport and wishes him success and happiness in his college career.

The response Neidich gets far outstrips the small effort involved. Many students write, telephone or drop by in person to tell him how much his pleasant reassurance meant to them during their initial adjustment to college life.

Budding scientists compete in five-state league

Inter-school rivalries, usually fought out on the gridiron or debating platform, moved into another arena last fall—science laboratories. High school students in Pennsylvania, Missouri, Washington, Ohio and Indiana now vie with one another for mastery in the newly-formed "Continental League."

Every month, three students from one school make up a science problem and forward it to their rivals for that month. Three students in the receiving school solve the problem and return their solution to their competitors for evaluation. If the solution is correct, the school responsible receives ten points; if a detail is omitted, eight points; if the solution submitted is incorrect, seven points. Students can refer to any materials they choose to work out a problem. The only reservation is that they must solve the problem themselves.

A school in one state competes with a school in another for a month at a time, from October through May. At stake are the individual motifs of each school, the winner taking possession of the loser's emblem. Each school meets every other one in the league twice a year.

Conceived by High School Science Teacher Robert Schwille of Brentwood, Penn., and Charles H. Schroeder of Monticello Junior High School, Longview, Wash., the science-quiz league was worked out at a summer session last year at Antioch College. They hope to work out plans for extending it to other states next year.

Orientation handbook for new seventh graders

Entering seventh graders at Gorton Junior-Senior High School, Yonkers, N. Y., now feel like veterans before they attend a single class. The reason: an orientation program conducted at the school.

The youngsters are invited to take tour of the school building before summer recess and are given a "Handbook for Seventh Grade Pupils," prepared by the school's business education department. The handbook fills them in on questions they may have about school procedures, policies and curriculums.

Included in it are details about the school calendar, homeroom assignments, fees, programs of study, grade reporting methods, homework assignments, and the like.

All of the information is designed

to set the students' minds at ease when they finally arrive in junior high in September. Result: very few cases of first day jitters have been reported at the school since distribution of the handbook was begun. Students know their school.

St. Paul halves costs of freeze up protection

Automatic thermo-alarm systems in the public schools of St. Paul, Minn., are saving that district's taxpayers thousands of dollars each winter. The alarms are manually set weekends, holidays and nights for protection against pipe freeze-ups.

According to Assistant Superintendent John M. Gran, the alarms were installed in 56 schools at a cost of $100 each. The result has been a halving of expenses for freeze-up protection. Prior to their installation, the annual cost ranged from $14,000 to $20,000, because each school was visited regularly by custodians drawing overtime pay.

Protection last winter cost less than $9,000.

The system employs a thermostat within each school. When the inside temperature falls below 45 degrees, the thermostat activates an alarm and flashing red light. Cooperative neighbors, previously informed of the device, telephone a member of the custodial staff who starts the school's furnace or puts it back in working order if it has failed. Custodial telephone numbers were furnished neighbors when the alarm systems were explained.

The city is divided into five areas, with one custodian assigned to each for this purpose.

So far, there have been three occasions when an alarm system alerted neighbors.

Gran reported that the signals occurred at odd hours during which the buildings would not have been protected under the former fire alarm system.

Schoolmen save time with pre-planned meetings

Administrators in Wappingers Central School District, Poughkeepsie, N. Y., have found an effective way to cut down on the time they spend in weekly meetings.

They simply plot out as much of the sessions as they can before meeting together.

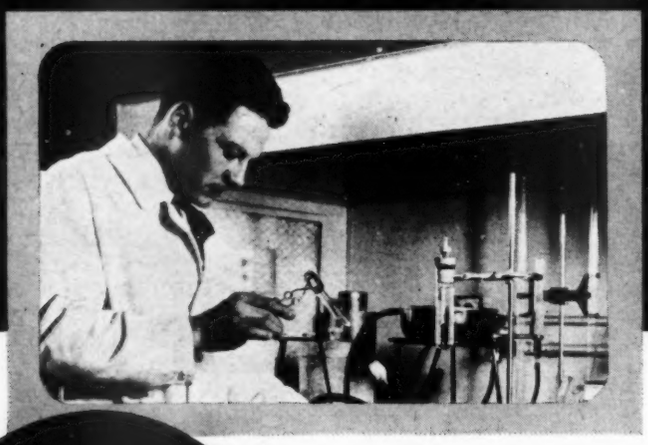
The superintendent and his five elementary principals separate each weekly session into three phases. The first segment is devoted to problems common to all elementary principals. These have already been discussed in a general way by the principals themselves during the week preceding each meeting. One of them is then appointed to present each problem to the superintendent during the weekly meeting.

The second phase is devoted to the problems of individual principals. Each school head, in turn, throws out his own particular school problems for discussion before the group.

Phase three is reserved for the discussion of suggestions aimed at improving the performance of the district as a whole. Anything meant to stimulate or direct the growth of the entire school system is brought up at this time for discussion by the entire group. The pre-planned administrative meetings have resulted in three distinct gains for all concerned. The weekly meetings take less time. Common discussions of problems have made each session more effective. Finally, the administrators feel that they are working together as a team to solve some of the problems faced by their expanding schools.

PHILCO

Closed Circuit TV Systems



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SM FOOD CLINIC

Richard Flambert answers your feeding questions

QUESTION: Does the snack bar have any place in a school lunch program?

■ You are referring here specifically to the place of the snack bar in the lunch program, not as an extracurricular or after school facility. The answer, even then, is "yes, under certain circumstances."

The problems occur when the snack bar becomes *the major facility*. In one district, the snack bar was built so completely and elaborately that a few days after the new school opened, the cafeteria itself was shut down and all food was served from the snack bar. It lasted for one semester and the school was quite proud of the profit it made. However, parents of the students took matters into their own hands and demanded that the cafeteria be reopened, and that many of the worst features of the snack bar be eliminated.

We came to another school district which had insufficient refrigeration for its cafeteria food. But there was a walk-in refrigerator devoted entirely to carbonated drinks, with a special cooling area for candy bars. In this district, it appeared, school officials were less concerned about milk spoilage than they were about serving soda that was not properly chilled!

These are examples of the snack bar getting in the way of the regular cafeteria program. This should never be allowed to happen.

In many of the scrambles and other quick service areas we have designed, we have recommended the inclusion of a snack bar for the service of such items as pure fruit juices, homemade cookies, hamburgers, milk shakes, etc. This has two desirable effects. First, it narrows the number of items carried without taking away the pattern of snack bars. Second, it increases the sale of plate lunches by having the students see the nutritious food and by helping them to realize that service is speedy.

QUESTION: We note that in many of the larger cities and districts men are replacing women as food service supervisors and managers. Do you consider this a progressive step?

■ So that there will be no misunderstanding, I should like to go on record as stating that women are superior in everything—pertaining to food. With very few exceptions, women are better cooks and managers. Our experience has shown that women are more loyal, have less absenteeism; they are cleaner and they take more pride in their work. What is equally, if not more, important is that women will follow recipes.

Men are coming into the supervisory field not because of greater ability in food production but because of their greater experience in the fields of accounting, economics and business. It is said that women workers respect a man manager more than a woman manager, but we have not found this to be the case.

In answer to your question, I would state that the gradual influx of men in school food service is a progressive and stimulating trend because it indicates a growing interest in school food service. But women should not be forced out. School food service is big business. Men and women should be interested in working together toward doing a better job in this area.

About the author. Richard Flambert is a partner in the firm of Flambert and Flambert, San Francisco, St. Louis, Omaha and Chicago, food service consultants and engineers specializing in schools and institutions. He is president of the International Society of Food Service Consultants.

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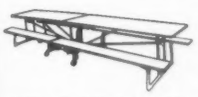

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How good are your schools?

continued from page 69

Q. Did the school board, or the administration, make any attempt to modify or change the evaluation reports?

BRADFORD: No. I would not think of or attempt to do such a thing.

Q. How much does an evaluation cost?

BRADFORD: Our elementary evaluation was typical. For the outside appraisal, it cost us about $600 to have the visiting committee come. You don't pay the members a salary, just travel, meals and lodging. It costs you paper, a little secretarial time, but most school people look upon this as an opportunity to observe things for their own benefit. For a self-evaluation, there's no monetary transaction. The whole faculty and staff participates; it's part of their work.

HOAGLAND: In terms of time, it's expensive. A good self-evaluation may take up to a year, counting all the planning involved. A visiting committee can evaluate a school in less than a week if you have prepared the way for it. Of course, the members would meet before and after to formulate plans and opinions. Again, our elementary evaluation was typical. It was several weeks after the visiting committee came, before we had the formal report in our hands.

Q. Do you consider the evaluations as having been worthwhile?

KREISMER: Certainly. The key, of course, is that the evaluating teams must have the proper attitude—the desire and eagerness to do some good, rather than just going through the motions. Obviously, you must have a competent team which judges and recommends to the best of its ability. The team must compare what is *actually being accomplished* with what you *want* accomplished, evaluating both with established criteria.

AX: Evaluation is a continuing thing; we've completed a formal appraisal of the district, but we still look into matters and recommend changes. This is just common sense. You can't sit back and stop evaluating just because you've completed the formalities. **End**

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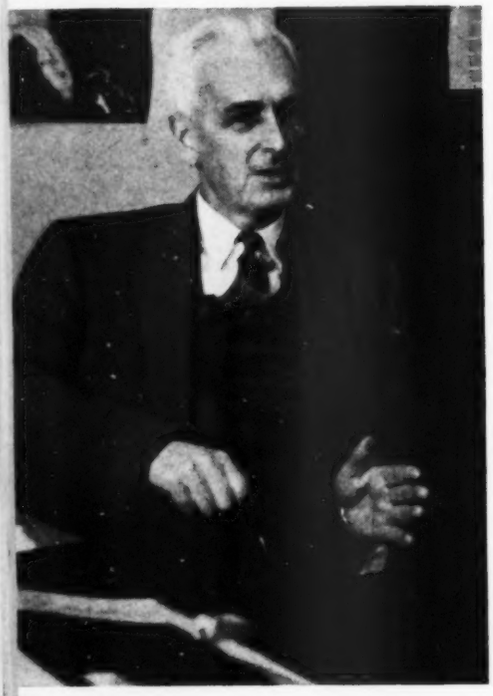
A Model Classroom

continued from page 60



"Students should share in the cost, but if they have to pay the whole cost, forget your junior college."

MORRISON

at least a year after your college is approved. After the chief administrative officer is chosen, I would say that the first thing he ought to do is to choose the admissions officer and director of student personnel. They must set up the admissions procedures and testing programs for the incoming students. I think this is extremely important—and it takes time.

Q. Now, this district is embarked on a community college. It has students, or knows where they are coming from; it has an opening date—September, 1962; it has a president and a site. What kind of curriculum should be set up?

MORRISON: In its original survey, the district should have evaluated what all of the needs are in the community. The job is to translate these needs into program. Now you're going to have to decide on priorities. In certain areas, where the need for technical education is very high, the first program that is established will most likely be in that field. In areas where the need is mostly for the college transfer, you will most likely start with that. If you start with the college transfer, there are certain programs of the terminal sort in the commercial field which usually succeed and which you can develop at the same time.

NOVAK: A lot depends on the facilities you have available. If there is a need for electronics but the building you're using is not set up for this sort of a program, you're going to have to let it wait until you can get the room and equipment.

MORRISON: Over all, though, you take what the needs are and you try to develop a program to meet these needs.

Q. Where can a school board get help in preparing its curriculum?

MORRISON: In some of the states you have a man at the state level who's had experience in this and who can easily make available to you the catalogs of other institutions. He can tell you which programs have succeeded well and which ones haven't. The state colleges and universities often provide much service in curriculum development of junior college programs.

Q. Is a degree necessarily the objective of a community college education?

NOVAK: No. We have men working in government offices who have good jobs, but who have never gone to college. They come in and take a course in college algebra, trigonometry, sociology, just to help them along in their jobs. Some don't care whether they even get credit for the course. They never want a degree. But all must meet our requirements for admission, a high school diploma.

Q. How should a community college be financed? Should tuition be charged?

MORRISON: I would say "yes" very definitely. I think that the student should be asked to share in the cost of his education—the student and the parent. I like the sharing idea. But if a student has to pay the whole cost, forget your community college.

NOVAK: Theoretically, sharing of the total cost of a full-time student in the state of Maryland is a threefold proposition. The student pays a third; the county pays a third; and the state pays a third.

Q. How much tuition should a community college realistically expect its students to pay?

MORRISON: This is a dangerous thing to say, but somewhere in the neighborhood of $200 to $250 a year. I would say this is a maximum figure. It depends on the area. You have to get anything over and above that from other sources. If you don't have a state support arrangement, the rest of it has to come from the community.

Q. How much will it cost to operate a school for the first year?

NOVAK: The number of teachers you're going to need and the services you want as far as equipment, library and so on are concerned will determine that. The first year that we operated, our budget was $60,000. Don't forget we were operating in a high school building with no maintenance costs in our budget.

Q. Then it is not a huge undertaking for a district to get started?

NOVAK: You are correct. This sum of money, even with a record 185 students, worked out very nicely for us.

Q. How and where do you get faculty members?

MORRISON: There are various places that you can write to. You have college and university placement services. You have local commercial placement services. And you'd be amazed at the number of people who are working in local industries who have had former teaching experience and who will apply to you without your even seeking them out.

Q Suppose the district has a high school English teacher who would like to earn a little extra money. Would you be willing to have her teach both in the high school and in the junior college at the same time?

NOVAK: Definitely not! In our county we have set down the basic rule

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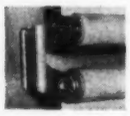

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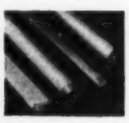

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that no high school or elementary teacher presently teaching in the county can teach in the junior college. There are a lot of reasons for this. One, of course, is the competition that might result among teachers in the county trying to get evening jobs in the community college. This could be a very difficult situation. Then, too, for best results and for student acceptance, they ought to have entirely different teachers than they had in high school. It's also very difficult to pick out an excellent high school teacher and move him into the junior college.

MORRISON: And you also want your students to be well prepared. If you steal the very best from the high school you've lowered the standards in the high school. In some cases, you may have to have part-time instructors who teach in both high school and junior college. It is essential to have a core of teachers that are working only on the faculty of the community college.

Q. Colleges, in general, have a certain freedom in the type of people they can hire. If Leonard Bernstein wanted to teach a course in musicology, he could not teach it in most elementary or high schools because he's not accredited. He could teach it in a university. Where do the community colleges—especially those under the jurisdiction of a school district—fit in here? Are you looking strictly for accredited teachers?

NOVAK: I would definitely say that the junior college teachers ought *not* to have to meet the full certification requirements of the state in which they are teaching. You'll find a lot of brilliant men and women who have graduated from liberal arts colleges, who have master's degrees and even Ph.D's, who are hired by many colleges throughout the country. I would be completely stymied if these people had to be certified by the state before I could hire them. If Leonard Bernstein comes to me looking for a part-time job in music, I'll hire him—if I have a vacancy.

Q. How many teachers do you need? Can you estimate this on a pupil-teacher ratio?

MORRISON: I don't think you can when you're starting. As a bare minimum, you need at least eight full-time instructors in order to cover the essentials.

Q. What subjects would these eight teach?

MORRISON: I would have at least one in the field of English; one in math; one—maybe two—in the field of social science. I might have two in English—it isn't always the same. Ordinarily, you aren't able to get a librarian at the very start, although I think it's desirable to have a librarian as early as possible. You have to have people who are strong

"We have set a basic rule that no high school or elementary school teacher in our district can teach in the college."

NOVAK

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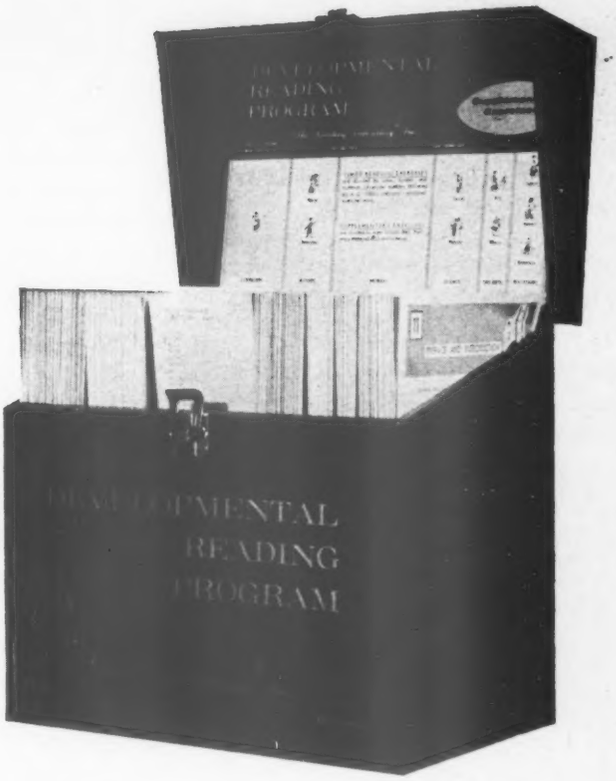

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Q. How much should a district pay its teachers?

NOVAK: You would have to pay full-time people the going rate for quality teachers in the area. Some junior colleges have college salary schedules. We don't happen to. We pay the same scale that the high school teachers get.

Q. Might a district hire people on a part-time basis who are teaching at a neighboring college?

NOVAK: Yes. This is done. I have a French teacher who teaches at the University of Maryland.

MORRISON: I think there's another area also. You sometimes have a retirement requirement at a senior college. You have somebody who has worked in a particular field and he has to retire at a certain age. Now, he could come to a junior college and teach one or two courses there. You've got a wonderful asset in having this man on a junior campus.

Q Should the community college develop an extracurricular program of the type that might be developed in a regular college—intercollegiate teams, newspaper, glee club?

NOVAK: Definitely yes. That type of activity is a very important part of a junior college.

MORRISON: The opportunities are different. In a senior institution, you're especially interested in those who are outstanding. In the junior college, I think there is an opportunity for the average student to participate in glee club, in debate, in athletics, in all of these other programs.

NOVAK: We have a college newspaper, student government and intercollegiate athletics. We have basketball, tennis and golf; and I maintain that these activities, however, if they're to be begun, should come from the students. I have never started one of these programs on my own. The students know what they want. Then they develop it.

MORRISON: There is the danger that in some institutions they are apt to copy the semi-professionalism that you find in some colleges. This should be avoided.

NOVAK: I fully agree.

Q. Should the community college be open to all students who wish to attend? Or should it be selective?

MORRISON: I think most of the selectiveness of the junior college should be within the institution. Any student who has the competency to gain by attendance at a junior college should have the opportunity. Now I'm not saying that this should be in the transfer program. As far as the transfer program is concerned, if you don't have the same standards as the four-year college and university, you're not going to do well. You have to maintain standards within the institution. But the selection process, I think, should

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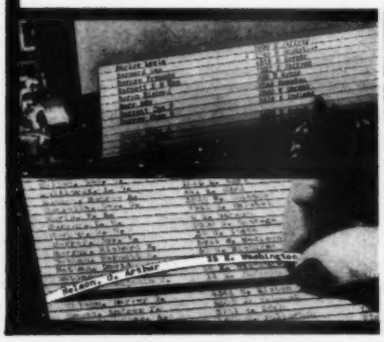

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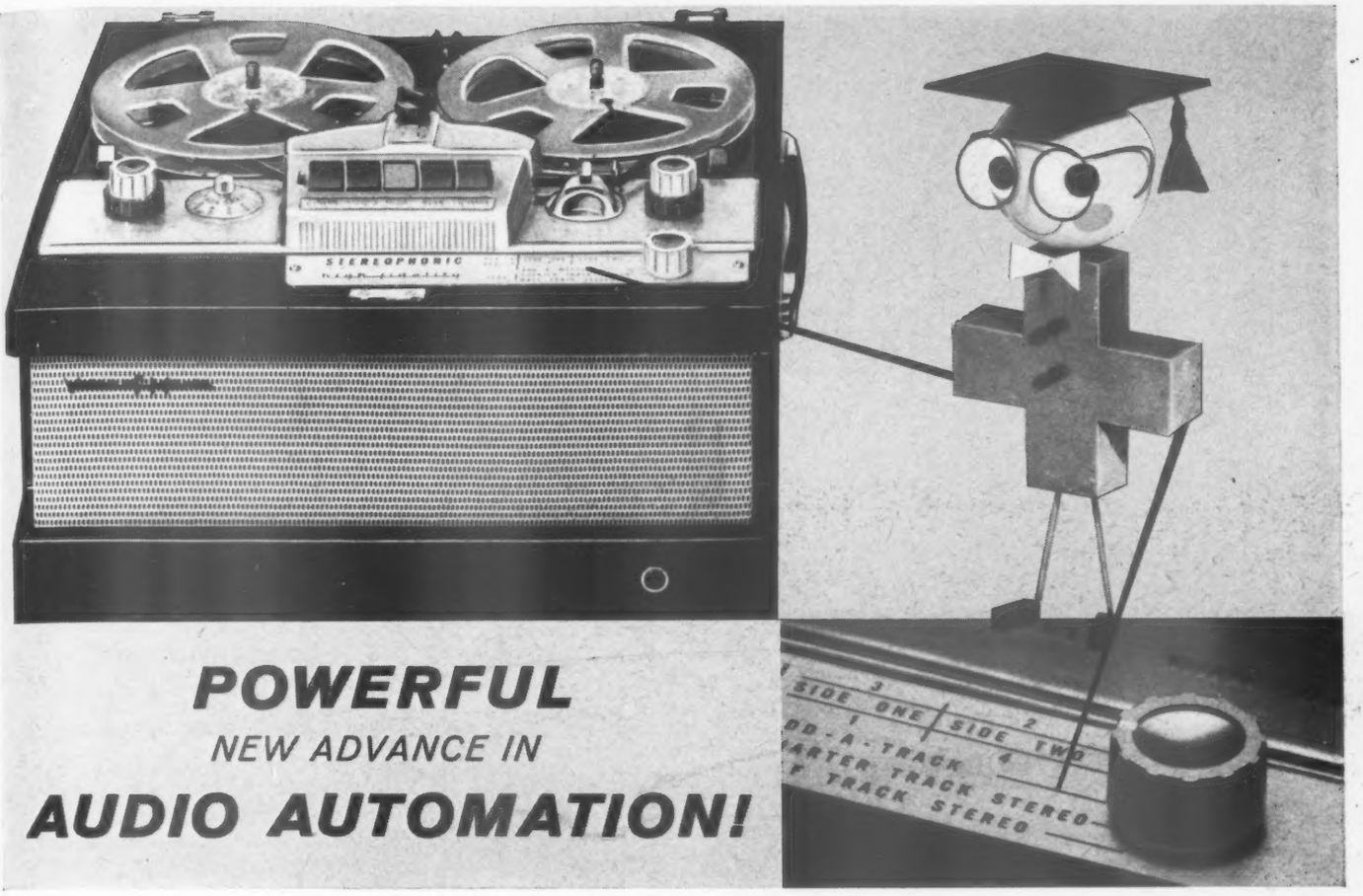

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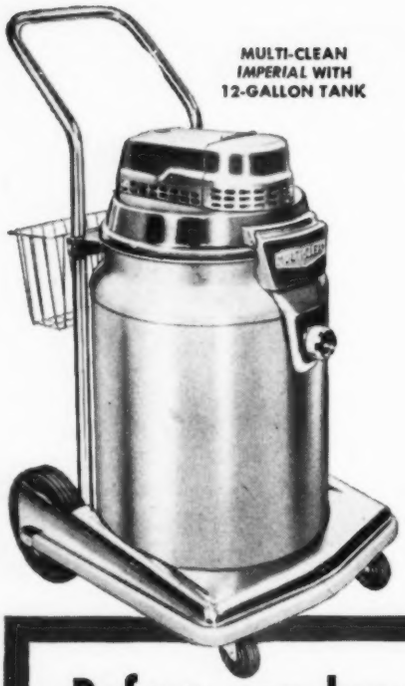
(Circle number 766 for more information)



MULTI-CLEAN *IMPERIAL* WITH 12-GALLON TANK

Within the next year or two, your firm will probably purchase one or more Vacuum Cleaners. Before making your choice, there are certain points you should consider . . . certain questions you should ask the salesman:

How much suction will it produce?

To create the powerful suction needed for *complete pickup*, the heavy-duty turbines of the new Multi-Clean IMPERIAL pull in air at rates up to 216 miles per hour. By moving more cubic feet per minute . . . and at greater speed, more pickup power is obtained. IMPERIALS create suction up to 92″ waterlift with closed orifice, 73″ with ½″ opening!

At what speed does motor operate?

Special Multi-Clean built 1 and 1½ hp motors turn at only 12,000 rpm with no load, 9,550 rpm with full load . . . much slower than the speed at which most other motors must operate in order to create same suction. Therefore, much less motor wear.

Before you buy a Vacuum Cleaner ...ask the Salesman these questions

How often must we replace brushes?

Stabilized motor brushes are an exclusive, patented Multi-Clean feature. Tests show their average life is 1,000-1,500 operating hours vs. 250-500 hours for standard brushes.

Is the filter washable?

Multi-Clean's patented filter is made from a quick-drying *washable* synthetic fibre which won't rot or mildew.

Does tank have a gravity drain?

Multi-Clean IMPERIALS have a convenient non-clogging gravity drain. Makes it easy to empty tank without disturbing the head.

Does it have two casters?

The practically tip-proof IMPERIAL has 2 big wheels plus 2 casters (instead of the traditional 1). This greater stability is important, for a 17-gallon Vacuum Cleaner weighs about 300 lbs. when full.

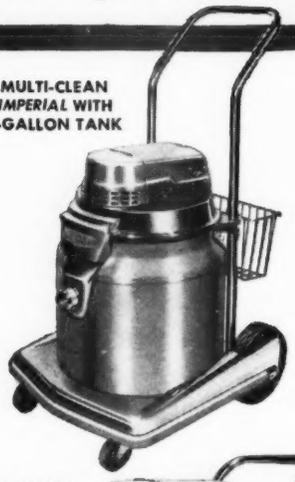
Is the cable detachable?

30-foot, 3-conductor IMPERIAL cable has same twist lock connector as most Multi-Clean Floor Machines. If you wish, same cable can be used for both.

And what about other features?

Other important advantages you gain when you buy a Multi-Clean IMPERIAL: By-pass motor cooling system . . . automatic shut-off to protect motor from water . . . improved design of clamp which holds power head . . . large wheels which facilitate moving up and down stairs or from building to building . . . wide choice of attachments.

For more information on the new IMPERIAL Vacuum Cleaners, see your local Multi-Clean Distributor . . . or write directly to factory.



MULTI-CLEAN *IMPERIAL* WITH 5-GALLON TANK

MULTI-CLEAN *IMPERIAL* WITH 17-GALLON TANK

MULTI-CLEAN® *Method*

MULTI-CLEAN PRODUCTS, INC.
Dept. SM-72-31, St. Paul 16, Minnesota

(Circle number 735 for more information)

be within the institution rather than in getting into the institution.

NOVAK: I feel—at least this is the philosophy of our school—that any student who graduates from a county high school and has a desire to go to college, ought to be given a chance to go.

Q. Suppose there aren't enough students in a district for a community college. What do you recommend?

MORRISON: One way is to give up the idea. The other is to combine with other school districts. It may be necessary to have dormitories.

Q. As another alternative, could you simply set up 13th and 14th grades in the high school?

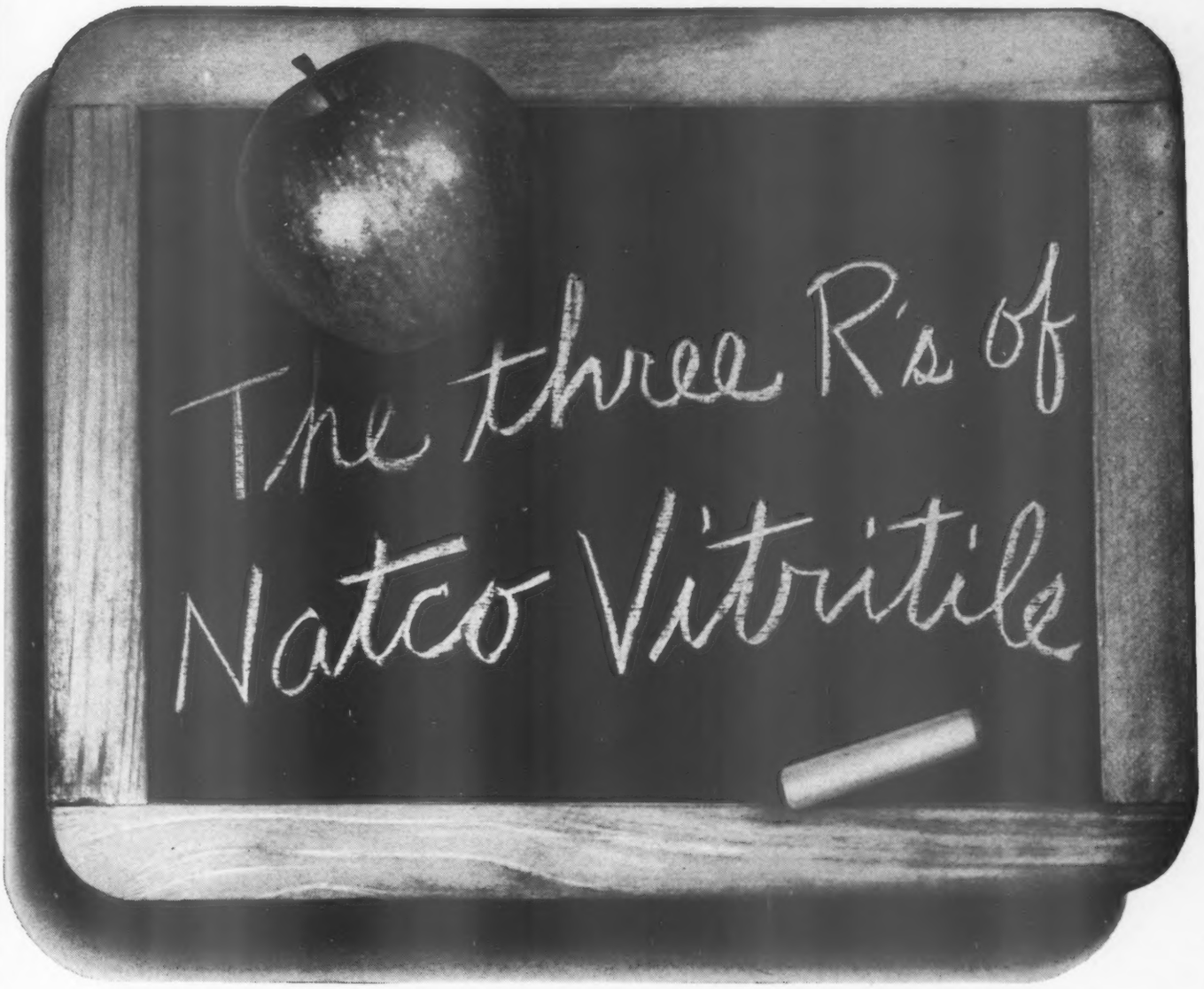
MORRISON: I would be against that. I think this would weaken the whole structure of the junior college.

Q *Should the goal of a community college be expansion to a regular four-year college?*

MORRISON: Again, no. If you're starting with the idea that this is on the way to a four-year college, I think you're making the wrong start. I feel very strongly about this. If you need a four-year college, go ahead and establish one. But leave the junior college alone because it is not merely the first two years of a four-year college. It's something different. It's *the* institution which is serving the whole community. End

"There's never enough time to get your college started."

MORRISON



Radiant

Natco Vitritile is available in a variety of attractive, radiant colors. All colors are permanent and will not fade. A periodic cleansing with common soap and water is all that's necessary to maintain Vitritile's original radiance.

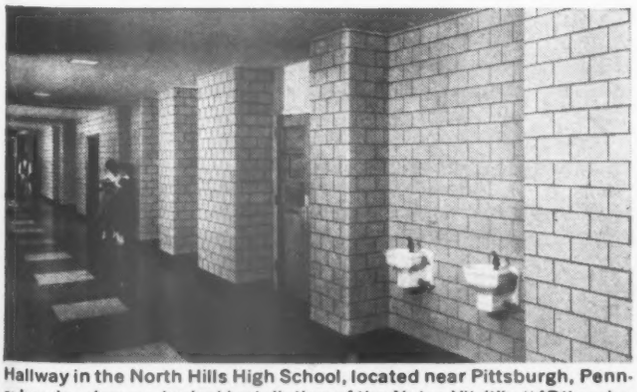
Resistant

Vitritile—a ceramic glazed structural clay facing tile—is resistant to moisture, fire, chemicals, dirt and scuffs. Interior walls of smooth Natco Vitritile resist the day by day wear and tear that only school children can administer.

Reliable

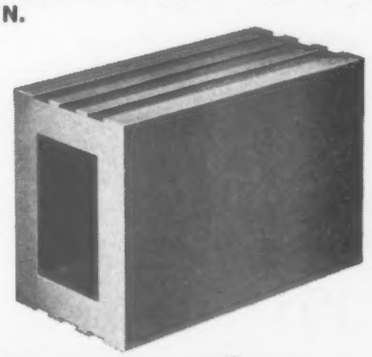
Install it and forget it! Vitritile's permanent, hard-fired finish assures years and years of maintenance-free service. Because it is a genuine clay tile product Vitritile will last the life of any school in which it is installed.

If you're building a new school or adding to an existing school it will be to your best interests to consider Natco Vitritile. For complete information write for catalog #S-61 N.



Hallway in the North Hills High School, located near Pittsburgh, Pennsylvania, shows a typical installation of the Natco Vitritile "4D" series (5 1/16" x 7 3/4" face size).

Vitritile is available in many shapes and sizes. Including the large 8W series (7¾" x 15¾" face size) and the popular 6T series (5 1/16" x 11¾" face size) available in nominal 2", 4", 6" and 8" thicknesses.



Natco Corporation

General Offices: 327 Fifth Avenue, Pittsburgh 22, Pa. Other Branch Sales Offices: Boston, Chicago, Detroit, Houston, New York, Philadelphia, Pittsburgh, Syracuse, Birmingham, Ala., Brazil, Ind. In Canada: Natco Clay Products Ltd., 57 Bloor St., W., Toronto.

(Circle number 736 for more information)

One Clerk...10,000 Items
Her Speed?...

10 postings per minute!

***VISI*record's split-second record location makes it the world's fastest record-keeping system. The speed and convenience of *VISI*record means savings up and down the line — less manpower needed, less space required, less operator fatigue, greater accuracy.**

***VISI*record speed in machine posted or automated systems actually kills idle machine time. And, *VISI*record works equally well in accounts receivable, purchase order follow-up, maintenance control and any of a hundred other applications in large or small organizations, where records must be kept and used quickly and accurately.**

Your *VISI*record man will be happy to show you how you can apply speed to your record-keeping the *VISI*record way. Meanwhile, write for case histories and other data.

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See VISIrecord at the Business Equipment Exposition — New York Coliseum, April 17-21. Write us for tickets!

VISIrecord

Systems Specialists in Principal Cities

(Circle number 765 for more information)

Science labs

continued from page 73

dow, permits visual supervision of the lab and lecture areas.

One of the special project rooms, designed for work with radioisotopes, contains a specially built fume hood. All controls are located outside it. The interior of the hood is lined with disposable material which can be removed should it become contaminated with radioactive materials. All of the chemistry lab's exhaust devices (including that of the fume hood) are devised to maintain a constantly lower air pressure in the lab than in adjacent buildings. This negative pressure within the hood and the lab itself prevents the possibility of gases, fumes or radioactive materials from being exhausted into the high school building.

A corner room in the chemistry lab serves as the school's science library. Here books, magazines and pamphlets about chemistry and other sciences are located in one accessible place for the use of the high school's staff and students.

Roof top laboratory

A plexiglas cupola, located at the roof level of the interior spiral stairway, serves as a weather-proof meteorological and astronomical observatory. Right nearby, is a separate observatory with a sliding roof. In it is mounted the school's four-inch photographic, equatorial, refracting telescope bought with money contributed by the classes of 1957 and 1958.

Wind measuring instruments, rain gauges and similar pieces of equipment are designed for use in the roof-top lab. The roof itself is paved with asphalt blocks to withstand the wear and tear of students walking across it. In addition, threaded-top posts have been included in the steel railing surrounding its perimeter. In order to set up heavy equipment, students simply screw it on to the threaded posts to make it secure.

The school's short wave radio is now all but completed. Though the science wing does not yet have its short wave station in operation, a 75-foot radio tower has already been mounted on the roof. The heavy capped plate, surrounded by three sturdy hooks, had been installed when the science wing was built to serve as a base for the tower. **End**

School Master 500 shown with exclusive accessory rewind take-up and semi-automatic slide changer.

SCHOOL MASTER BRILLIANCE CONCENTRATES ATTENTION

School Master Projectors produce brilliant images that command student attention. Children concentrate on the subject matter. They learn faster. They remember longer.

A School Master is made-to-order for schoolroom use ● Entire optical system removes as a unit for cleaning ● Powerful but quiet fan moves a steady stream of air through the projector to dissipate lamp heat and protect filmstrips or slides ● Handles filmstrips or 2 x 2 slides with equal ease and the change from one to the other is accomplished in seconds *without* tools ● Built-in telescoping carrying handle makes it easy to carry from one room to another ● Exclusive accessory Rewind Take-up allows filmstrips to be rewound automatically into storage containers.

School Masters, available in 500 and 750 watt manual or remote control models, are priced from $84.50. For additional information see your Graflex AV dealer. Or, write Dept. SM-31, Graflex, Inc., Rochester 3, N. Y. A subsidiary of General Precision Equipment Corporation.

**Trade Mark. Prices subject to change without notice.*

Get your copy of the **GRAFLEX AUDIOVISUAL DIGEST**

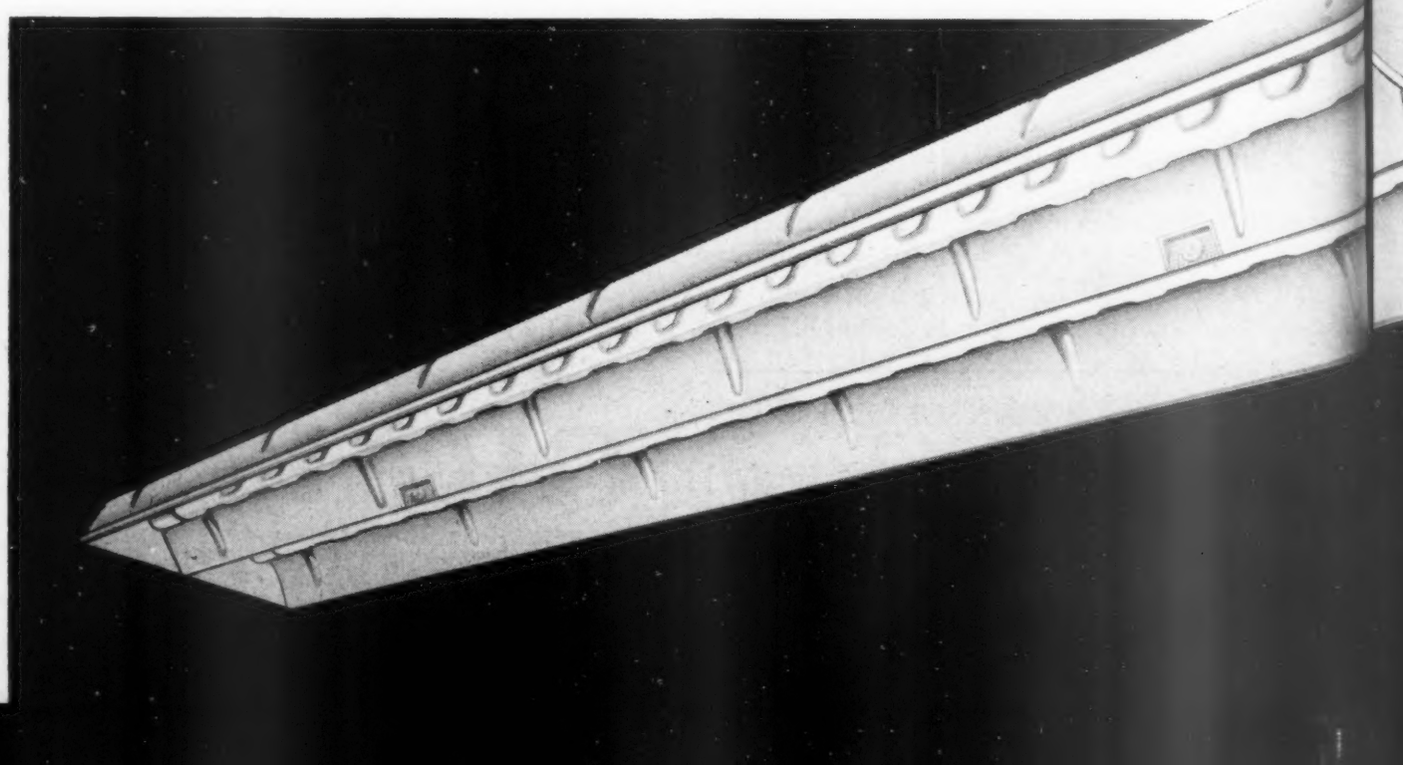
48-page digest of leading articles of the past three years. Free to AV directors. Others may get copy for 25¢ mailing-handling cost.

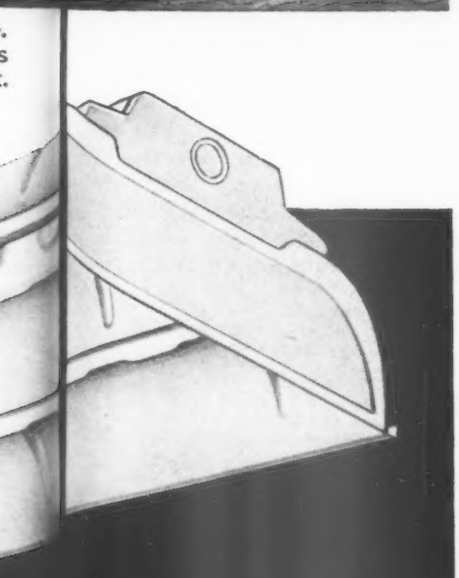
GRAFLEX®

A SUBSIDIARY OF GENERAL PRECISION EQUIPMENT CORPORATION

(Circle number 722 for more information)

Wheaton College Gymnasium in Wheaton, Illinois. Architect and Engineer: *A. J. Peterson;* Electrical Contractor: *Robert Winie.* The large structure has a total of three basketball courts. Day-Brite CFI®-30 lighting fixtures are arranged in ten mixed rows of 16-foot tandems and 8-foot single louvered units that concentrate maximum illumination on centers of each court.





No "hidden ball plays" in Wheaton College Gym with Day-Brite lighting

High level illumination with a minimum of glare is needed to follow the fast, furious action on a basketball court.

In the Wheaton College Gym, Day-Brite CFI-30 lighting fixtures have proved ideal by maintaining 100 footcandles over the entire 3-court area. Moreover, their 30% upwards lighting components aid upward-looking players and spectators by eliminating harsh ceiling contrasts and "hot spots."

Wheaton school officials report that the fixtures have needed cleaning only once during the first year, thanks to the self-cleaning up-draft of air through the apertures. Economical operation, plus low initial cost per footcandle, make the Day-Brite CFI practical for almost every gym application.

No matter what your lighting problem is, there's a Day-Brite fixture for you. Contact your Day-Brite representative listed in the Yellow Pages, or write: *Day-Brite Lighting, Inc., 6260 No. Broadway, St. Louis, Mo., and Santa Clara, Calif. In Canada: Amalgamated Electric Corp., Ltd., Toronto 6, Ont.*

DAY-BRITE®

NATION'S LARGEST MANUFACTURER OF
COMMERCIAL AND INDUSTRIAL LIGHTING EQUIPMENT

(Circle number 789 for more information)

sorry!

We were unable to obtain booth space at the St. Louis Regional Meeting of the **AASA, March 11-14,**

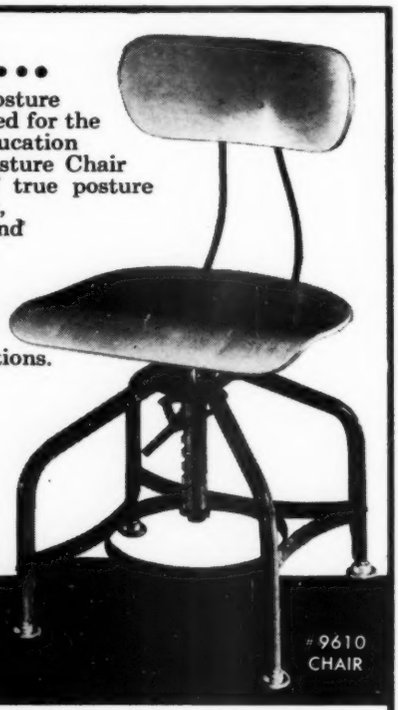
but ***our editors will be there***

SCHOOL MANAGEMENT headquarters will be at the **Coronado Hotel** and, on the convention site, in the Press Room

and . . . if you're going to be in **Philadelphia,** March 25-28, come see us in Booth **D-60**

Here's How To Make . . .

● Toledo classroom-tested Adjustable Posture Chairs and Typewriter Tables are designed for the specific and unique needs of Business Education instruction ● The #9610 Adjustable Posture Chair combines the recognized advantages of true posture seating with exceptional strength. Easy, TAMPERPROOF adjustments of seat and backrest accommodate the tall and short students ● The new #6100-L COORDINATOR Desk with all steel base and bi-level top is rigid, vibration-free, provides the most efficient working heights for both typing and clerical operations.



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Business Education Teaching And Learning Easier

WRITE TODAY for complete file on these quality Toledo products.

#6100-L DESK one of several tables and desks.

TOLEDO

The Toledo Metal Furniture Co.

1603 N. Hastings Street

Toledo 7, Ohio

(Circle number 775 for more information)

Yours for the asking

continued from page 12

available with several pieces of optional equipment, such as mower, snowplow, and tiller.

For a free copy, circle number 826 on the Reader Service Card.

Drafting machine bulletin. An illustrated four-page bulletin, published by the V. & E. Mfg. Co., describes various models of drafting machines manufactured by the firm. Specifications for drafters with 16-, 18- and 20-inch arms are included, together with a section on scales available for them.

For a free copy of the bulletin, circle number 843 on the Reader Service Card.

Spotlight information. The Strong Electric Corp. is distributing a bulletin which describes its "Trouperette" incandescent spotlight. Specifications and operational features are included. The light was designed for use in schools.

For a free copy of the bulletin, circle number 865 on the Reader Service Card.

Air filter. A four-page bulletin by the Union Carbide Corp. describes the firm's newly developed panel-type air filter. The filter is said to last much longer than other throw-away types. The bulletin includes graphs of air flow, filter sizes, and installation data.

For a free copy of this bulletin, circle number 819 on the Reader Service Card.

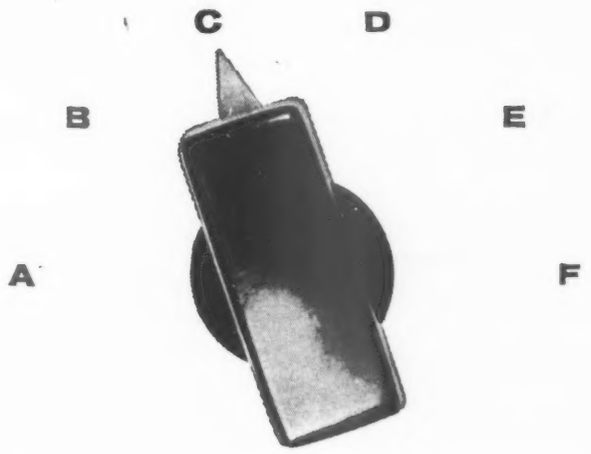
Glass patterns. The Mississippi Glass Co. is distributing a 20-page catalog which recommends special patterns of glass for school installations. Typical installations are illustrated. Light distribution and transmission charts are also included.

For a free copy of this catalog, circle number 822 on the Reader Service Card.

Purchasing office furniture. A 24-page brochure, published by the Leopold Co., incorporates a checklist to help the buyer designate every detail as to size, arrangement of drawers, types of material and finish, and optional features. The buyer "assembles" a pattern of his choice. Fifty-eight units are shown in the brochure, together with design features.

For a free copy of this brochure, circle number 838 on the Reader Service Card.

simplicity



Monitor Language Laboratory System is Simple to Operate

With these two switches, the teacher directs the entire laboratory. Once the student programs have been distributed to all positions, the instructor can monitor every individual booth without leaving the console desk. One switch selects the row, the other selects the individual booth within that row.

Supplementary control switches operate with the same simplicity . . . simplicity that has been engineered into all MONITOR equipment, the result of 12 years experience in the language laboratory field.

MONITOR is the inventor of the electronic language laboratory. Today, MONITOR installations serve more than 400 schools in the United States alone, over 52 foreign countries around the world.

For simplicity, reliability and nationwide service . . . Choose MONITOR with confidence.

For the name of the exclusive distributor in your area, write to MONITOR

MONITOR **Language Laboratories**

division of Electronic Teaching Laboratories
5034 Wisconsin Ave., N.W., Washington 16, D. C.
Offices and Manufacturing Plant in the Nation's Capital

(Circle number 718 for more information)

In your school planning, include the beauty and quality of school furniture by All-Steel

All-Steel's complete line of steel office furniture and lockers make school layouts and planning easier and more efficient. The beautiful styling lends itself to modern schools. ASE Furniture is quality built to last and give years of fine service and performance. Whether for replacement of a single classroom teacher's desk, a completely new administrative office, or for files, storage cabinets or lockers, call your ASE dealer or write for illustrated catalog.

ASE

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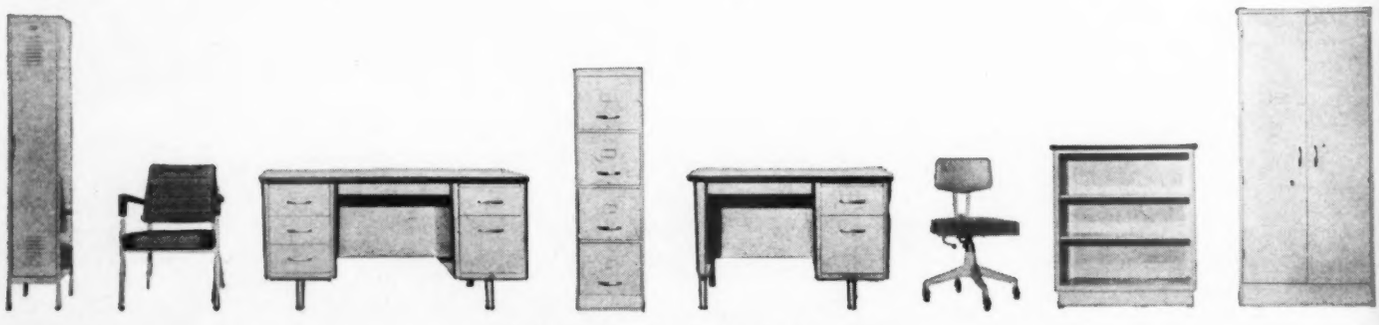


(Circle number 701 for more information)

SM | PRESS RELEASES

News from the business firms serving your schools

Portable science lab

A four-gallon pressurized tank for running water and propane gas supply from a refillable tank are features of a portable science lab by Custom Fabricators, Inc. The lab-on-wheels has an acid-proof formica working surface and stainless-steel sink. It drains into a polyethylene receptacle.

The cabinet has a large storage compartment and two drawers for

equipment. Gas supply is ample for 60 hours of continuous use.

For more information, circle number 831 on the Reader Service Card.

■ ■ ■

Compact dust collector

A dust collector of compact size which can service five machines in a wood-working shop, is being marketed by Aget Mfg. Co. With the installation of five ducts, the machine will service each piece of equipment even if all are being operated together.

For more information, circle number 875 on the Reader Service Card.

■ ■ ■

Transparency viewer

Where a large overhead projector is not practical, this portable transparency viewer will show standard mounts to small groups. Manufactured by Columbia Graphics, the viewer has a light which goes on automatically when the transparency is dropped on to a trigger, and dims when the mount is removed.

The lightweight unit, about the size of an attache case, has a detachable cover containing storage compartments for the mounts, pencils, pointer and extension cord. It can be operated effectively in normal daylight.

Viewing area is 8½ by 11 inches.

For more information, circle number 863 on the Reader Service Card.

■ ■ ■

Steam cooker

The General Electric Co. has introduced a high-compression steam cooker, designed for volume cooking of fish, fowl or vegetables. An optional unit is also offered for use in preparing meats or other foods requiring browning.

The cooker is automatic. A removable door and inside fittings, a drain system with a straight drain valve, and a removable drain pan and siphon make the cooker an easy-to-clean unit.

From a cold start, the steamer is said to reach the desired temperature in about nine minutes. Several safety devices are incorporated.

For more information, circle number 899 on the Reader Service Card.

■ ■ ■

Panel truck converts

The International Harvester Co. is introducing the "Scout," a small all-purpose vehicle which converts from a panel truck or pickup to a passenger runabout.

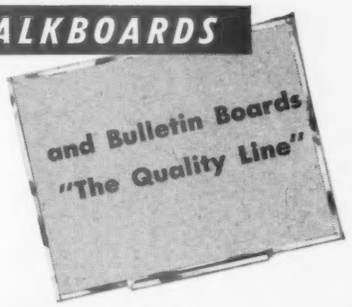
The truck is available with two- or

LOOK FOR THIS SYMBOL OF QUALITY

Weber Costello Co.
SINCE 1896
CHICAGO HEIGHTS TORONTO

WHEN YOU BUY—

CHALKBOARDS



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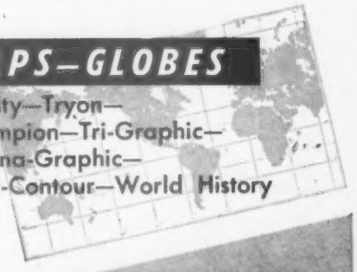
MAPS—GLOBES



Reality—Tryon—
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Magna-Graphic—
Semi-Contour—World History

WRITE FOR CATALOG
WEBER COSTELLO
1224 McKinley St., Chicago Heights, Ill.
In Canada
57 Ingram Drive, Toronto, Ontario

(Circle number 768 for more information)

Hampden Chairs can take it!

STURDY FOLDING CHAIRS . . . LAST YEARS LONGER

No. 76
Extra wide steel seat and back, comfort-contoured.
Tubular steel frame, wobble-free construction.
All metal edges completely beaded for extra strength and safety.
U-shaped cross bars can't twist or break.

Chairs also available with tablet arm; steel, padded, wood or foam rubber seat.

Hampden offers the finest quality style and value for every adult and juvenile public seating need — and in every price range.

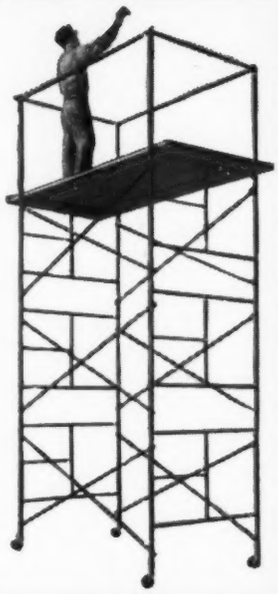
Even Hampden's thrift-priced chairs are unusually strong, good-looking . . . have costliest chair features. They are comfortable and safe — won't tip or tilt. Enamel bonded on . . . rust resistant. **WRITE:** Dept. B-2 **HAMPDEN, Easthampton, Mass.**

See Hampden at Space K-21-23 Philadelphia

Hampden

Manufacturers of:
PUBLIC SEATING • OUTDOOR and JUVENILE FURNITURE • BRIDGE SETS

(Circle number 724 for more information)



ROLL to the job anywhere
REACH overhead work
...with

SAFWAY

built-up scaffold work towers

Interchangeable parts assemble to any height and platform area

- build up towers to fit every job.
- work platforms at any levels.
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- parts reassemble in many forms.

WRITE FOR BULLETIN 83-R

SAFWAY

SAFWAY STEEL PRODUCTS, INC., 6228 W. STATE ST., MILWAUKEE 13, WIS.

(Circle number 752 for more information)

easy mounting on any surface

Boston sharpeners now can be mounted on wood, glass, masonry or steel without drilling holes.

specify BOSTON®
PENCIL SHARPENERS

guaranteed quality

The strong all-metal construction of Boston Pencil Sharpeners makes them last . . . Bases are guaranteed against breakage . . . There is a model for every need, and one mounting kit fits all models.

Send for catalog and price list.

C. HOWARD HUNT PEN CO., CAMDEN 1, NEW JERSEY

(Circle number 727 for more information)

four-wheel drive, four-cylinder engine, three-passenger cab with removable top, five-foot long pick-up body, fold-down windshield, removable door glass and removable doors.

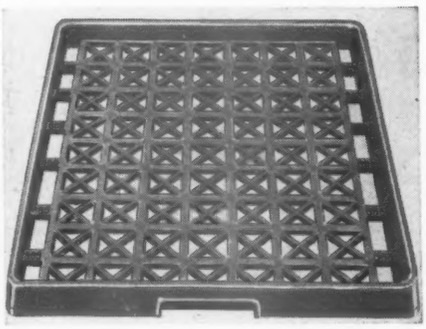
Optional equipment includes a snow plow and winch.

For more information, circle number 878 on the Reader Service Card.

■ ■ ■

Lightweight utility rack

A plastic utility rack weighing only 2½ pounds, requiring no carriers or inserts, is now being marketed by Raburn Products, Inc. The rack will handle soup bowls, cups and similar



items in 20-inch dishwasher machines.

An unusual nesting feature saves 70% in space over previous designs.

For more information, circle number 872 on the Reader Service Card.

■ ■ ■

Tiles have vivid colors

Natco Corp. is supplementing colors on ceramic glaze structural clay facing tiles with the introduction of vivid shades of orange and red. Previous colors still available include black, orange, yellow, dark blue, dark green, brown, red, light blue and light green. The colors are said to be richer and deeper than standard field shades.

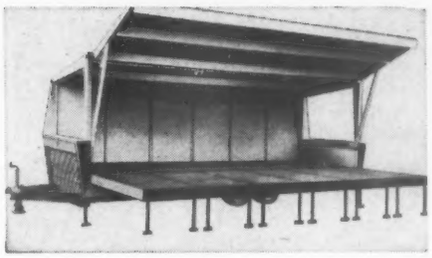
These colors are available in tiles sized eight by 16 inches, 5⅓ by 12 inches and 5⅓ by eight inches, and in construction bricks themselves.

For more information, circle number 852 on the Reader Service Card.

■ ■ ■

Portable stage

A portable stage with an acoustically balanced shell is being marketed by the Wenger Music Equipment Co. The stage is convertible for road travel as a trailer unit with wheels, lights, brakes and hitch. The semi-enclosure provides a 16-foot flat stage, a two-level stage, a four-step riser or a stage with end risers and is appropriate for band, chorus or similar activi-



ties. Connections for speakers, microphones and lights are provided, and storage space is included within the trailer.

For more information, circle number 830 on the Reader Service Card.

World War I Films

Three new films by Coronet Instructional Films tell the story of the first World War and are recommended by the producer for complementing studies in history.

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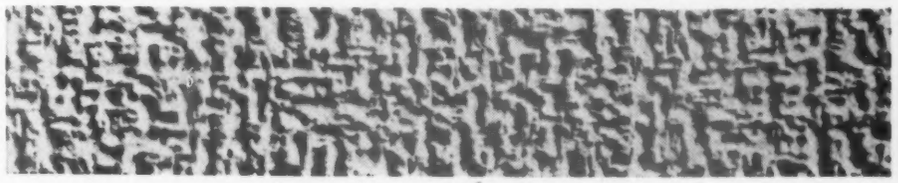

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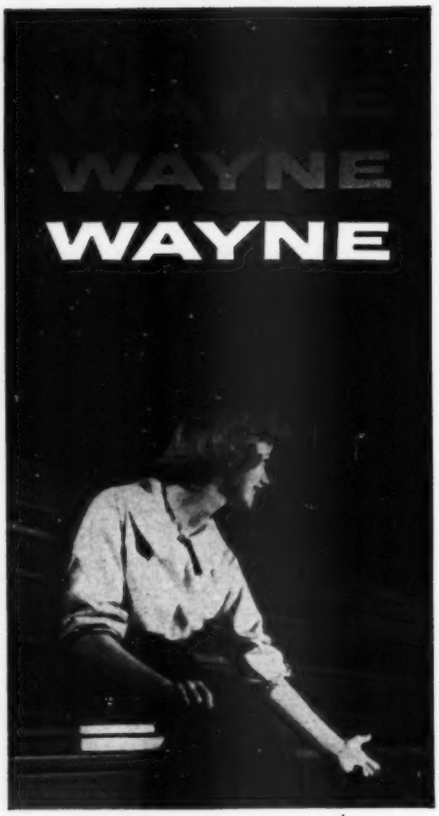

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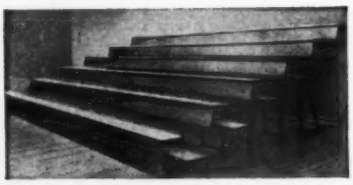

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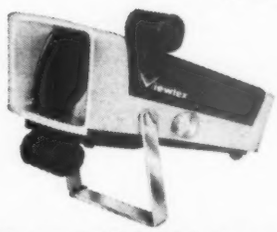

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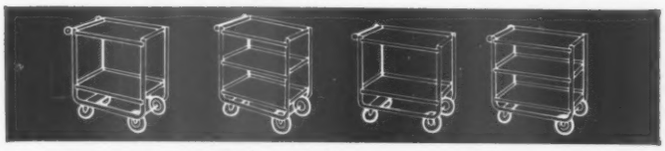

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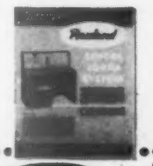

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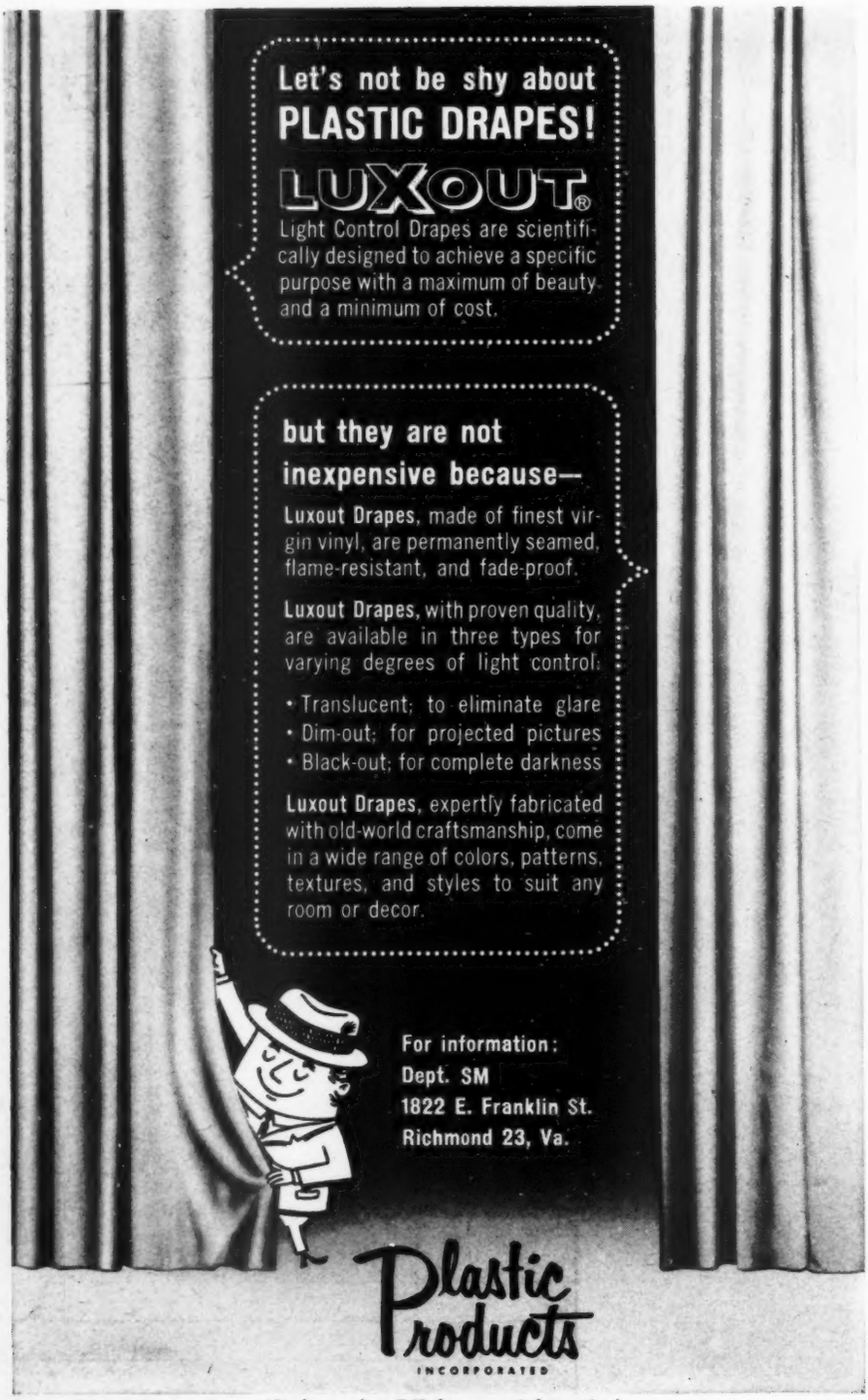
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